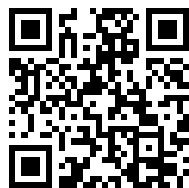
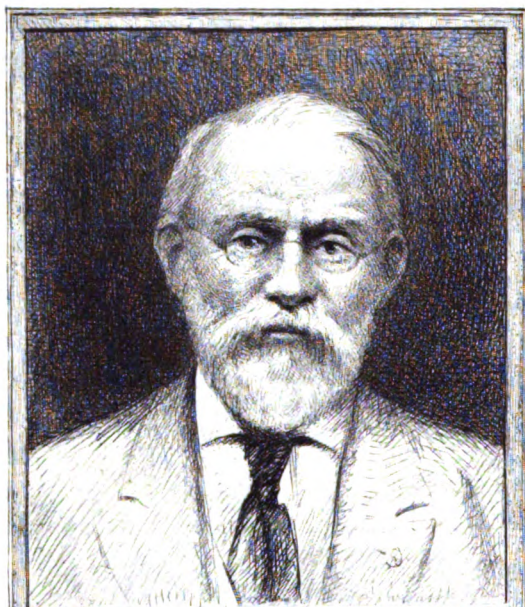

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The *u* *1* *256* JOURNAL *of the*
UNITED SERVICE INSTITUTION
of INDIA

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Printed by C. G. Harris at the Pioneer Press, Allahabad,
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United Service Institution of India.

RULES OF MEMBERSHIP.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign, naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 120 + entrance fee (Rs. 10) = Rs. 130.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, *to be paid in advance*. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 10, *in advance*, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 10.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II, para. 204, and King's Regulations, para. 509.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.

MILITARY WIDOWS' FUND,

— BRITISH SERVICE —

THIS FUND enables a British Service (Army) officer, by subscribing from Rs. 6 to Rs. 10 per quarter, to assure, in the event of his death while on the Indian Establishment, immediate payment:—

| | | | |
|----------------|-----------|----|-----------|
| To his widow | Rs. 5,850 | to | Rs. 8,250 |
| For each child | „ 500 | to | „ 750 |

Payments are made immediately on receipt of report of death, irrespective of death occurring in or out of India.

The sum paid to the widow varies with subscription and the sum for each child varies with age of child. Subscriptions are based on the rank of the officer.

Benefits are payable whether the deceased officer's family is residing in India or not.

It is to the advantage of an officer to join the Fund on his first tour of service in India, as otherwise, on joining it in a subsequent tour he would have to pay subscriptions for any previous tours in the country as a married officer, since 1st January 1919.

The Fund (late Queen's Military Widows' Fund) was established in 1820, to assist families of British Service (Army) officers dying in India, and mainly to enable them to return Home without delay.

The Fund is controlled by a Committee consisting of and elected by subscribing officers serving at Army Headquarters, Simla.

For admission and rules apply to:—

The Secretary,
MILITARY WIDOWS' FUND,
Army Headquarters, Simla.

United Service Institution of India

PATRON :

His Excellency the Viceroy and Governor-General of India.

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His Excellency the Governor of Bombay.
His Excellency the Governor of Bengal.
His Excellency the Commander-in-Chief in India.
His Excellency the Governor of the United Provinces.
His Excellency the Governor of the Punjab.
His Excellency the Governor of Burma.
His Excellency the Governor of Bihar and Orissa.
His Excellency the Naval Commander-in-Chief, East Indies.
The General Officer Commanding-in-Chief, Northern Command.
The General Officer Commanding-in-Chief, Southern Command.
The General Officer Commanding-in-Chief, Eastern Command.
The General Officer Commanding-in-Chief, Western Command.

MEMBERS OF THE COUNCIL, 1925-26.

Ex-officio Members.

- | | |
|---|---|
| 1. The Chief of the General Staff. | 9. The Air Vice-Marshal, Commanding R.A.F., in India. |
| 2. The Secretary, Army Department. | 10. The Director-General, Indian Medical Services. |
| 3. Mr. Denys Bray, C.S.I., C.I.E., C.B.E. | 11. The Director, Medical Services. |
| 4. Mr. J. Crerar, C.S.I., C.I.E. | 12. The Director, Royal Indian Marine. |
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| 7. The Master-General of Supply in India. | |
| 8. The Engineer-in-Chief. | |

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| | *7. Major-Genl. C. A. C. Godwin, C.M.G., D.S.O. |

* Members of the Executive Committee.

Additional Members of the Executive Committee.

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2. Major C. M. S. Manners, D.S.O., M.C.
3. Major N. M. Carruthers.
4. Captain J. G. Smyth, V.C., M.C.
5. Major E. M. Little, O.B.E., R.A.

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(Cox's and King's Branch), SIMLA.

1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed inside front cover.

3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.

4. There is a well-stocked library in the Institution, from which members can obtain books on loan free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V.-P. for the postage.

5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members but ordinary members wishing to have their Journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.

6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found in para. IV, Secretary's Notes.

7. Members are responsible that they keep the Secretary carefully posted with regard to changes of address.

8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months

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United Service Institution of India.

JANUARY, 1926.

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I.—New Members.

The following new members joined the Institution from 1st September to 30th November 1925.

Life Members.

Captain S. Greeves.

Captain His Highness the Sar
Desai Sahib of Savantwadi.

Captain J. K. Lawson (formerly
an ordinary member).

* * * *

Ordinary Members.

Captain A. F. Dobbs.

Captain D. H. Haugh.

Lieut. A. P. Dixon.

Captain O. Slater.

Captain A. G. C. Fane.

Captain F. G. W. Radcliffe.

Lieut. A. G. L. Maclean.

Major A. D. Gordon.

Captain J. F. Marindin.

Lieut. H. W. Daniel.

Lieut. G. S. E. McG. Smith.

Major W. D. Hall.

Captain E. A. Glennie.

Captain H. A. Skone.

Major A. P. Harrison.

Captain A. B. Knight.

Captain W. J. Cawthorn.

Major N. F. Graeme.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library. The following list of books may be found useful for reference by officers studying for Promotion Examinations or entrance to the Staff College.

The lists of books presented and purchased as shown in the current year's Journals should also be consulted.

The special periods of military history for future Promotion Examinations are as follows (*vide* I. A. O. 409 and 493 of 1924 and I. A. O. No. 172 of 1925):—

| 1 | 2 | 3 | 4 | 5 |
|------------|----------------------|---|------------------------------------|---|
| Serial No. | Date of examination. | Campaign set for the first time. | Campaign set for the second time. | Campaign set for the last time. |
| 1 | April, 1926 ... | ... | Operations in Waziristan, 1919-20. | Russ o-Japanese War— (a) <i>General Period</i> .—1st May 1904 (Yalu), to 5th Sept., 1904. (b) <i>Special Period</i> .—Battle of Liao-Yang, 23rd Aug. to 5th Sept. 1904. |
| 2 | October, 1926 | Campaign of the British Army in 1914 in France and Belgium from the outbreak of hostilities up to and including the operations on 9th Sept. 1914. | ... | Waziristan (as given in Serial 1, column 4). |

The following Extract of Army Council Instructions, issued for week ending 7th January, 1925, is printed for the convenience of candidates.

* * * * *

4. *Examination of Officers for Promotion—Military History.*

1. With reference to A. O. 464 of 1924, * * * .

2. In * * * April, 1926, the periods of the Russo-Japanese War for examination will be altered to the following:—

(a) General period from 1st May, 1904 (Battle of the Yalu), to 5th September, 1904, both dates inclusive.

(b) Special period. The Battle of Liao-Yang, 23rd August to 5th September, 1904.

3. Candidates will be required to have a knowledge of the tactics employed in the special period, while questions in the general period will be mainly of a strategical nature.

4. Normally 75 per cent. of the question for captains will be taken from the general period and 75 per cent. of the questions for lieutenants from the special period.

5. Both periods will be included in a single three-hour examination paper.

TANKS.

The following notes re Tanks have been received from the General Staff:—

Information has been received that if the use of Light Tanks is involved in any questions set in forthcoming examinations before the revised editions of Cavalry and Infantry Training (Vol. II) are issued, the necessary data regarding the characteristics and performance of the Tanks will be given with the questions.

The following official information regarding the Light Tank is, however, given below for the benefit of officers working for examinations:—

Armament—One 3-pdr. gun, two Vickers guns, three Hotchkiss guns (one for A/A work and one spare).

Average speed of a company of tanks by day; on a road—7—8 miles per hour.

Average speed of a company of tanks by day; cross-country (good going)—6—7 miles per hour.

Average speed of a company of tanks by night ; on a road,
with headlights—6 miles per hour.

Average circuit of action (cross-country)—135 miles.

Can cross track 6 feet wide.

Can climb verticle obstacle 3 feet high.

MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL HISTORY OF THE WAR.

Military Operations, France and Belgium, Vol. I (to October, 1914).

| | | |
|-------|-------|---|
| Ditto | ditto | Vol. II (to 20th November, 1914) (in Press). |
|-------|-------|---|

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914 (General Maurice, new edition).

1914 (Viscount French).

My War Memories (Ludendorff).

General Headquarters, 1914—16, and its Critical Decisions
(Falkenhayn).

The March on Paris, 1914 (Von Kluck).

Ypres, 1914. (An official account) (German General Staff.)

Oxford Pamphlets, August 1914. The Coming of the War.
(Spencer Wilkinson).

Oxford Pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military,
Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grobe Krieg : Die Schlacht bei Mons (German General
Staff).

Der Grobe Krieg : Die Schlacht bei Longwy (German General
Staff).

Story of the Fourth Army (Montgomery).

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNTS.—

A Brief Record of the Advance of the Egyptian Expeditionary
Force, 1919.

The Australian Imperial Force in Sinai and Palestine (H. S. Gullett).

The New Zealanders in Sinai and Palestine (Lt.-Col. C. G. Powles).

Yilderim (Dr. Steuber).

B.—OTHER BOOKS.

Allenby's Final Triumph (W. T. Massey).

How Jerusalem was Won (W. T. Massey).

Outline of the Egyptian and Palestine Campaigns, 1914—18
(Bowman-Manifold).

L'Attaque du Canal de Suez (Douin).

3. *The Gallipoli Campaign.*

Official Account: Official History of the War, Naval Operations,
Vols. II and III.

Gallipoli Campaign (Outline of Military Operations). By A
Student.

Official Despatches.

The Dardanelles (Callwell).

Experiences of a Dugout (Callwell).

Despatches from the Dardanelles (Ian Hamilton).

The Navy in the Dardanelles Campaign (Wemyss).

The World Crisis (Winston Churchill).

**4. *The Russo-Japanese War, 1904, up to and including
the battle of Liao-Yang.***

A Staff Officer's Scrapbook (Ian Hamilton).

German Official Account.

Lectures on the Strategy of the Russo-Japanese War (Bird).

Question on the Russo-Japanese War (Brunker).

Official Account: The Russo-Japanese War (Naval and Military), 3 Vols., published by Committee of Imperial Defence.

Outline of the Russo-Japanese War (Ross).

A Study of the Russo-Japanese War (Chasseur).

My Experiences at Nan Shan and Port Arthur (Tretyakow).

Outline History of the Russo-Japanese War, 1904, up to the
Battle of Liao-Yang, with Questions and Answers (P. W.)

A short account of the Russo-Japanese War ("Footslogger").

An account of the battle of Liao-Yang (with questions and 10
maps for examination purposes) (Bird).

5. *Organization of Army since 1868.*

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue. Vols. I to XI.

Outline of the Development of British Army, by Maj.-Genl.
Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

B.—FORCES OF THE EMPIRE.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, *viz.*, R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

6. *Development and Constitution of the British Empire*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The Government of the British Empire (Jenks, 1923).

The Foundation and Growth of the British Empire (J. A.
Williamson, 1918).

The Beginnings of English Overseas Enterprise (Sir C. P.
Lucas, 1917).

The British Empire Series. (XII volumes).

The Government of England (L. A. Lowell, 1912).

The Expansion of the British Empire (W. H. Woodward,
1921 and 1924 edition).

Overseas Britain (E. F. Knight, 1907).

The Origin and Growth of the English Colonies and of Their
System of Government (H. E. Egerton, 1903).

A Short History of Politics (Jenks, 1900).

The English Constitution (Bagehot, 1909).

The Expansion of England (Sir J. Seely, 1883).

Introduction of the Study of the Law of the Constitution
(A. V. Dicey, 1908).

England in the Seven Years' War (Sir J. Corbett, 1907).

Selected Speeches and Documents on British Colonial Policy,
2 Vols. (A. B. Keith, 1918).

B.—BOOKS ON SPECIAL PORTIONS OF THE EMPIRE OR WORLD.

The Rise and Expansion of British Dominions in India (Sir
A. C. Lyall, 1894).

A Brief History of the Indian Peoples (Sir W. H. Hunter
1907).

The Nearer East (Hogarth, 1902).

Modern Egypt (Cromer, 1908).

Egypt and the Army (Elgood, 1924).

The History of Canada (W. L. Grant).

Nova Scotia (B. Wilson, 1911).

Report on British North America (Sir C. P. Lucas).

The Union of South Africa (R. H. Brand, 1909).

Short History of Australia (E. Scott).

History of the Australasian Colonies (Jenks, 1912).

The English in the West Indies (J. A. Froude, 1888).

The Lost Possessions of England (W. F. Lord, 1896).

7. *Military Geography.*

Naval and Military Geography of the British Empire (Dr.
Vaughan Cornish, 1916).

Elementary Imperial Military Geography (Capt. D. H. Cole
1924).

Introduction of Military Geography (Col. E. S. May).

Imperial Defence (Col. E. S. May).

Main Feature of the Japanese and other Pacific Problems.
(Reprinted from "Morning Post." Sifton Præd.)

Britain and the British Seas (H. J. Makinder, 1907).

Military Geography (Macguire).

Imperial Strategy (Repington).

War and the Empire (H. Foster).

Historical Geography of British Colonies (Dominions), 7 Vols.

(Sir C. P. Lucas, 1906—17)—

- Vol. 1, Mediterranean.
- Vol. 2, West Indies.
- Vol. 3, West Africa.
- Vol. 4, South Africa.
- Vol. 5, Canada.
- Vol. 6, Australia.
- Vol. 7, India.

The Influence of Sea Power on History (A. T. Mahan, 1890).
 Historical Geography of the British Empire (Hereford George).
 The Mastery of the Pacific (A. R. Colquhoun, 1902).
 Frontiers (C. B. Fawcett, 1918).

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes or ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.* :—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India. Members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing per-

manently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased, and also a list of books useful to members studying for the Staff College and Promotion Examinations, will be found under Secretary's Notes in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

The new catalogue completed to 31st March 1924 is now available. Price Rs. 3-8-0 or postage paid Rs. 3-14-0.

VII.—Gold Medal Prize Essay Competition, 1925-26.

The Council have chosen the following subjects for the Gold Medal Essay for 1925-26 :—

(i) The effect of an efficient enemy air force on our strategy, tactics and communications if engaged in a major war on or beyond the N.-W. Frontier of India.

or

(ii) Bearing in mind the responsibility of the British Government for the well being of the Empire as a whole, discuss the progressive steps to be taken to create an Indian Army commanded, trained and administered by Indians, and capable of affording that support to a self governed India without which she will be unable to take her place in the Empire on terms of co-partnership.

The following are the conditions of the competition :—

1. The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army and Royal Air Force or Auxiliary Forces who are members of the U. S. I. of India.
2. Essays must be printed or type-written and submitted in triplicate.
3. When a reference is made to any work, the title of such work is to be quoted.
4. Essays are to be strictly anonymous. Each must have a motto and, enclosed with the essay, there should be sent a sealed envelope with the motto written on the outside and the name of the competitor inside.
5. Essays will not be accepted unless received by the Secretary on or before the 30th June 1926.
6. Essays will be submitted for adjudication to three judges chosen by the Council. The decisions of the three judges

will be submitted to the Council, who will decide whether the Medal is to be awarded and whether the essay is to be published.

7. The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1926.
8. All essays submitted are to become the property of the United Service Institution of India absolutely and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.
9. Essays should not exceed 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,

E. J. ROSS, MAJOR,

Secretary, U. S. I. of India.

SIMLA :

1st October 1925.

VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the rate of Rs. 2 per manuscript or type-written page.

IX.—

Books Presented.

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|--|
| 1. India's Parliament Vol. X (Presented by Govt. of India, Central Publication, Calcutta). | ... 1925 | Official. |
| 2. One Increasing Purpose (Presented by Hodder & Stoughton, London). | ... 1925 | A. S. M. Hutchin- son. |
| 3. Robert E. Lee, The Soldier | ... 1925 | Major-General Sir Frederick Maurice. |
| 4. Department of Defence Library Catalogue. (Presented by Secretary, De- partment of Defence). | 1924 | T. Trumble. |
| 5. The Complete Guide to Military Map Reading. (Presented by Gale & Polden). | 1925 | |

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|--------------------------------|
| 6. Memories of the early life and services of a Field Officer. (Presented by Brig.-Genl. Gwyn Thomas, C.M.G., D.S.O.) | <i>n. d.</i> | Major David Price. |
| 7. Strategical Atlas of the Oceans (Presented by Sifton Præd, London). | 1925 | Vaughan Cornish. |
| 8. The Great Pacific War (Presented by Oxford University Press, Bombay). | ... 1925 | Hector G. Bywater. |
| 9. Military Engineering, Vol. II. Defences. (Presented by H. M. S. Stationery Office, London). | 1925 | Official. |
| 10. Military Report of the Presidency and Assam District. (Presented by Govt. of India, Central Publication Branch, Calcutta). | <i>n. d.</i> | Official. |
| 11. Common Mistakes in the Solution of Tactical Problems and how to avoid them. (Presented by Hugh Rees, London). | 1925 | Brevet Lt.-Col. A. B. Beauman. |
| 12. Life of Shivaji Maharaj (Presented by the Shiri Shivaji Memorial Committee). | ... 1921 | N. S. Takakhav. |
| 13. Critical Study of the Campaign in Mesopotamia up to April 1927. Parts I & II (5 copies each). (Presented by Govt. of India, Central Publication Branch, Calcutta). | 1925 | Official. |

Books Purchased.

| | | |
|---|----------|----------------------------|
| 1. The Jutland Scandal | ... 1916 | Sir Reginald Bacon. |
| 2. The Reformation of War | ... 1923 | Col. J. F. C. Fuller. |
| 3. General Sir John Cowans, G.C.B., G.C.M.G., Vols. I & II. | 1924 | Major Rutter & Major Owen. |

X—Pamphlets.

The following are available for sale on application to the Secretary :—

- (a) British and Indian Road Space Table (separately). Price as. 8 each, plus postage. It is suggested that these may be useful for staff rides, etc.
- (b) Diagram of Ammunition Supply (India), Price as. 4, plus postage.
- (c) Skeleton Diagram of Signal Communications of a Division. Price as. 6, plus postage.
- (d) Home War Establishment Tables (provisional). Price Re. 1-4-0 per copy, plus postage.

XI.—Schemes.

The following schemes based on lectures given at the course for officers studying for the Staff College Entrance Examination, are now available for sale, on application to the Secretary :—

- (a) Mountain Warfare (with four problems). Price Rs. 4, plus postage.
- (b) Administration (with one problem). Price Rs. 2, plus postage.
- (c) Artillery (with one problem). Price Rs. 2, plus postage.

To save expense to officers, maps, other than sketch maps, are not being supplied by the Institute. It is thought that the maps required will be readily obtainable by students.

These are for (a) Survey of India maps of Waziristan and Baluchistan, and for (b) and (c) Map 1/100,000 Rheims (1st Training, for War Paper. Staff College Entrance Examination, 1924).

In addition three Tactical Schemes suitable for Promotion Examination are available. (Price Rs. 5 each, with maps).

- (d) Captain to Major—2 Schemes.
 - (e) Lieut. to Captain—1 Scheme.
- Other Schemes are in preparation.

United Service Institution of India.

Prize Essay Gold Medallists.

(With rank of Officers at the date of the Essay.)

- 1872.. ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.
 1873.. COLQUHOUN, Capt. J. S., R.A.
 1874.. COLQUHOUN, Capt. J. S., R.A.
 1879.. ST. JOHN, Maj. O. B. C., R.E.
 1880.. BARROW, Lieut. E. G., 7th Bengal Infantry.
 1882.. MASON, Lieut. A. H., R.E.
 1883.. COLLEN, Maj. E. H. H., s.c.
 1884.. BARROW, Capt. E. G., 7th Bengal Infantry.
 1887.. YATE, Lieut. A. C., 27th Baluch Infantry.
 1888.. MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., 24th Punjab Infantry (specially awarded
 a silver medal).
 1889.. DUFF, Capt. B., 9th Bengal Infantry.
 1890.. MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.
 1891.. CARDEW, Lieut. F. G., 10th Bengal Lancers.
 1893.. BULLOCK, Maj. G. M., Devonshire Regiment.
 1894.. CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.. NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.
 1896.. BINGLEY, Capt. A. H., 7th Bengal Infantry.
 1897.. NAPIER, Capt. G. S. F., Oxfordshire Light Infantry.
 1898.. MULLALLY, Maj. H., R.E.
 CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a
 silver medal).
 1899.. NEVILLE, Col. J. P. C., s.c.
 1900.. THUILLIER, Capt. H. F., R.E.
 LUBBOCK, Capt. G., R.E. (specially awarded a silver medal).
 1901.. RANKEN, Lieut.-Col. G. P. P., 46th Punjab Infantry.
 1902.. TURNER, Capt. H. H. F., 2nd Bengal Lancers.
 1903.. HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.
 BOND, Capt. R. F. G., R.E. (specially awarded a silver medal).
 1904.. MACMUNN, Maj. G. F., D.S.O., R.F.A.
 1905.. COCKERILL, Maj. G. K., Royal Warwickshire Regiment.
 1907.. WOOD, Maj. E. G. M., 99th Deccan Infantry.
 1908.. JEUDWINE, Maj. H. S., R.A.
 1909.. MOLYNEUX, Maj. E. M. J., D.S.O., 12th Cavalry.
 ELSMIE, Maj. A. M. S., 56th Rifles, F. F. (specially awarded
 a silver medal).
 1911.. Mr. D. PETRIE, M.A., Punjab Police.
 1912.. CARTER, Maj. B. C., The King's Regiment.
 1913.. THOMSON, Maj. A. G., 58th Vaughan's Rifles (F.F.).
 1914.. BAINBRIDGE, Lieut.-Col. W. F., D.S.O., 51st Sikhs (F.F.).
 NORMAN, Maj. C. L., M.V.O., Q.V.O., Corps of Guides (specially
 awarded a silver medal).
 1915.. No Award.
 1916.. CRUM, Maj. W. E., V.D., Calcutta Light Horse.
 1917.. BLAKER, Maj. W. F., R.F.A.
 1918.. GOMPERTZ, Capt. A. V., M.C., R.E.
 1919.. GOMPERTZ, Capt. M. L. A., 108th Infantry.
 1920.. KEEN, Lt.-Col. F. S., D.S.O., 2/15th Sikhs.
 1921.. No Award.
 1922.. MARTIN, Maj. H. G., D.S.O., O.B.E., R.F.A.
 1923.. KEEN, Colonel F. S., D.S.O., I.A.
 1924.. No award.
 1925.. No Award.

MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medal are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(a) For officers—British or Indian—silver medal.

(b) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers and soldiers at the date of the Award.)

1889.. BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890.. YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

* *N.B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Indian Auxiliary and Territorial Forces and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

MacGregor Memorial Medalists—(contd.).

- 1891.. SAWYER, Major H. A., 45th Sikhs.
RAMZAN KHAN, Havildar, 3rd Sikhs.
- 1892.. VAUGHAN, Capt. H. B., 7th Bengal Infantry.
JAGGAT SINGH, Havildar, 19th Punjab Infantry.
- 1893.. BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
FAZALDAD KHAN, Dafedar, 17th Bengal Cavalry.
- 1894.. O'SULLIVAN, Major G. H. W., R.E.
MULL SINGH, Sowar, 6th Bengal Cavalry.
- 1895.. DAVIES, Capt. H. R., Oxfordshire Light Infantry.
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
- 1896.. COCKERILL, Lieut. G. K., 28th Punjab Infantry.
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897.. SWAYNE, Capt. E. J. F., 10th Rajput Infantry.
SHAHZAD MIR, Dafedar, 11th Bengal Lancers.
- 1898.. WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899.. DOUGLAS, Capt. J. A., 2nd Bengal Lancers.
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900.. WINGATE, Capt. A. W. S., 14th Bengal Lancers.
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901.. BURTON, Maj. E. B., 17th Bengal Lancers.
SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.
- 1902.. RAY, Capt. M. R. E., 7th Rajput Infantry.
TILBIR BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903.. MANIFOLD, Lieut.-Col. C. C., I.M.S.
GHULAM HUSSAIN, Lance-Dafedar, Q. O. Corps of Guides.
- 1904.. FRASER, Capt. L. D., R.G.A.
MOGHAL BAZ, Dafedar, Q. O. Corps of Guides.
- 1905.. BENNICK, Maj. F., 40th Pathans (specially awarded gold medal).
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906.. SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.
GHAFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.
- 1907.. NANGLE, Capt. M. C., 92nd Punjabis.
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908.. GIBBON, Capt. C. M., Royal Irish Fusiliers.
MALANG, Havildar, 56th Punjab Rifles.
- 1909.. MUHAMMAD RAZA, Havildar, 106th Pioneers.

MacGregor Memorial Medalists—(concl'd.).

- 1910.. **SYKES**, Maj. M., c.m.g., late 2nd Dragoon Guards (specially awarded a gold medal).
TURNER, Capt. F. G., R.E.
KHAN BAHADUR SHEER JUNG, Survey of India.
- 1911.. **LEACHMAN**, Capt. G. E., The Royal Sussex Regiment.
GURMUKH SINGH, Jemadar, 93rd Burma Infantry.
- 1912.. **PRITCHARD**, Capt. P. P. A., 83rd Wallahabad Light Infantry (specially awarded a gold medal).
WILSON, Lieut. A. T., c.m.g., 32nd Sikh Pioneers.
MOHIBULLA, Lance-Dafedar, Q. V. O. Corps of Guides.
- 1913.. **ABBAY**, Capt. B. N., 27th Light Cavalry.
SIRDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.
WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).
- 1914.. **BAILEY**, Capt. F. M., I.A. (Political Department).
MORSHEAD, Capt. H. T., R.E.
HAIDAR ALI, Naik, 106th Hazara Pioneers.
- 1915.. **WATERFIELD**, Capt. F. C., 45th Rattray's Sikhs.
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916.. **ABDUR RAHMAN**, Naik, 21st Punjabis.
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).
- 1917.. **MIAN AFRAZ GUL**, Sepoy, Khyber Rifles.
- 1918.. **NOML**, Capt. E. W. C. (Political Department).
- 1919.. **KEBLING**, Lt.-Col. E. H., m.c., R.E.
ALLA SA, Jemadar, N.-E. Frontier Corps.
- 1920.. **BLACKER**, Capt. L. V. S., Q. V. O. Corps of Guides.
AWAL NUR, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides.
 (Special gratuity of Rs. 200.)
- 1921.. **HOLT**, Major A. L., Royal Engineers.
SHEER ALI, Sepoy No. 4952, 106th Hazara Pioneers.
- 1922.. **ABDUL SAMAD SHAH**, Capt., o.b.e., 31st D. C. O. Lancers.
NUR MUHAMMED, Lance-Naik, 1st Guides Infantry, F. F.
- 1923.. **BRUCE**, Capt. J. G., 2/6th Gurkha Rifles.
SOHBAT, Head Constable, N.-W. F. Police.
HARI SINGH THAPA, Survey Department.
- 1924.. **HAVILDAR RAHMAT SHAH**, N.-W. F. Corps.
NAIK GHULAB HUSSAIN, N.-W. F. Corps.
- 1925.. **SPEAR**, Captain C. B., 5/13th Frontier Force Rifles.
JABBAR KHAN, NAIK, 5/13th Frontier Force Rifles.

The Journal

OF THE

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Vol. LVI JANUARY, 1926 No. 242

EDITORIAL.

To everyone who values highly the peace of the world, the attitude of the Turks with regard to the Mosul decision cannot fail to be a source of the deepest regret. In no country is that regret more deeply felt than in the British Empire, for friendship with Turkey has always been part of our traditional policy in the middle East.

Friendship, however deeply seated it may be, has still its limitations. It may, as it has in the past in this case, survive the test of actual war, but it cannot resist a long period of continuous bickering and deceit. Rightly or wrongly, throughout the war, the British Nation managed to preserve, in one way or another, the feeling that Turkey had been misled into taking up arms against us, while the gallantry shown in the field by her ill-trained and half starved soldiery, did much to obscure the feelings which would normally have been aroused by her brutal treatment of the British and Indian soldiers who were so unlucky as to fall into her hands as prisoners.

Since the war Turkey has taken every possible step to alienate British sympathy, and friendship has been stretched almost beyond the breaking point. Again and again we have made allowances for Turkish barbarism, to an extent which could not have been possible to any more civilised nation. All this appears, however, to have been in vain, and, once more, Turkey, by her disregard of the solemn judgment of the highest tribunal which the world has yet devised, and by her scarcely veiled threats of war, has succeeded in placing herself in a position where she cannot fail to forfeit the sympathy of every right thinking person.

Whether the Turkish threats to reverse by force the decision which she is in honour bound to accept, amount in fact to more than mere bluff, is a difficult matter to decide. Bluff is a favourite form of what the Turk is pleased to call diplomacy, and it may be that she is trying it once again. But bluff, under the most favourable conditions, is a dangerous weapon, and one most likely to recoil with violence on the head of the person who makes use of it. A Government which continually resorts to such a policy without success, must, sooner or later, find itself faced with serious internal difficulties, and must forfeit the support of its own proletariat. Herein, we believe, lies the danger of the present situation, for once the Turkish Government has adopted this attitude, it may be that public opinion in Turkey will make a withdrawal impossible.

The Turkish Government used this policy at Chanak. It was assessed at its proper value, met with firmness, and, as a result, collapsed hopelessly. Can this same Government, bankrupt as it is both in policy and in funds, dare again to face its subjects, inform them that its bluff has been called, and that it only remains to climb down? Again, signs are not wanting that the present Government is rapidly losing its popularity, and history tells us that foreign war is a favourite resort of an unscrupulous government when it finds itself faced with serious internal difficulties.

Finally the strength of Bolshevik influence in Turkey must be accorded its full value. In an article in the present number of the Journal a contributor discusses the gravity of the Bolshevik menace to the peace of the world, and it is well to consider very carefully the situation which he so ably describes. Britain is the first and greatest enemy of Bolshevism, and against her the Bolshevik Government are in search of every possible opportunity. It is already an open secret that the Bolshevik Government is doing everything in its power to spur on the Turks to action against us, and have promised assistance in the form of money, material and weapons. All these factors add greatly to the dangers of the situation, and fully justify the British Government in taking all the steps necessary to meet any eventuality which may arise.

On the other hand there are many influences which make for peace. The British Nation has never, either in the past or in the present, had any desire for war with Turkey. There is no doubt whatever that we are prepared to accept at once and without hesitation any reasonable suggestions which Turkey may offer for

the alleviation of the situation, provided only that these fulfil the following conditions. Firstly, we are in honour bound to support the Government of Iraq in its just claim to the suzerainty of the Mosul Walayat, and from this no threats, open or veiled, will deter us. Secondly, as members of the League of Nations, we are bound, not only to accept the ruling of that tribunal, but to support it actively when required. From these principles nothing which the Turks can say or do will in any way move us. If Turkey has any suggestions to offer, these will be carefully and fully weighed, and the greatest possible consideration will be shown to Turkish national aspirations and national pride. Turkey must clearly understand, however, that we have already reached the extreme limit of forbearance, and it is now for her to suggest any reasonable lines along which an improvement in the situation is to be sought.

In our opinion the strongest hope of peace lies in the fact that the one argument which appeals above all others to Turkish mentality is that of superior strength. Turkey probably realises that if she attempts to obtain by force a reversal of the League's decision, she starts at a very grave disadvantage. In the first place she has openly flouted the decision of the representatives of all the Great Powers, and so has definitely forfeited the sympathy which normally she might expect from them, while she has recently disgusted all civilisation by her treatment of those Christians who were unfortunate enough to be within her reach. Secondly, by her misguided policy, she has succeeded in alienating any sympathy which might be felt for her by any important part of the populace of the British Empire, who are now likely to present a solid front in resisting any aggression which she may contemplate. Thirdly, she cannot hope, even under the most favourable conditions, to achieve more than a very temporary and local success against the far superior forces which the British Empire can place in the field: and fourthly, she has lost the initial advantage of surprise, for full preparations have now been made to meet any situation to which her attitude may lead.

Taking all these matters into consideration, we do not consider that Turkish threats will be translated into active hostilities. The possibility does, however, exist, and it would be foolhardy not to be prepared for it. In our opinion, it is more likely that she will endeavour, by her usual tortuous intrigues, to produce, in the future a situation where the odds will not be so greatly against her. The danger of war is, however, very real and must be faced with steady determination. Probably by the time this Journal is in

the hands of members a decision will have been reached one way or the other.

* * * * *

This year's manœuvres in the Northern Command area have been of exceptional interest, and it may fairly be claimed that the Commanders and staffs on either side proved that they had been able to keep themselves abreast of the developments of modern warfare, in spite of the handicap imposed by finance and the consequent lack of practice in the handling of modern mechanical weapons.

A full report on the manœuvres will shortly be issued by the General Staff, and will soon be available for perusal by all, but in the meantime it may not be out of place to refer to some of the more striking points brought out by the operations.

The most salient feature, in our opinion, was the paralyzing effect which a hostile air force, even of moderate strength, has on the movement of ground troops. In this case there was no lack of mobility. Seldom, except in actual warfare, can a greater strain have been imposed on the marching powers of the troops. It is, in fact, almost impossible for anybody but the troops themselves to appreciate the intense strain which was placed upon them by these few days of operations. It is easy enough to say that troops can move at night and rest during the day. But, in actual fact, in an Eastern theatre of war, proper rest by day is almost impossible. In the conditions which pertain in this country, or indeed in any other where the army in India is likely to find itself engaged, really effective rest by day is almost out of the question—there is an absence of shade, the heat and glare of the sun is too great, while rest is disturbed by thousands of flies. There are, moreover, innumerable duties which must be performed, and which can only be carried out properly by daylight—the care of arms, the normal routine work within a unit, and, above all things, the reconnaissances for the next night movement, for movement by night implies careful and detailed reconnaissance by day.

Even during these few days of operations it was easy to see that, when battle was actually joined, the troops of both sides were very tired, and had lost much of their drive and dash. But it must be remembered that these operations only extended over

a very short period, while, in actual warfare, the approach march might well extend to hundreds instead of tens of miles, and the operations might last weeks instead of days.

Under conditions such as these efficiency is bound to suffer enormously. Unless the most careful arrangements are made and the utmost forethought is shown, troops are likely to have lost practically all their fighting value long before they have fired a shot.

It must be remembered too, that this night movement seriously complicates the question of bringing supplies and baggage up to the fighting troops. In the old days, when movement took place almost entirely by day, there was little difficulty on this score. It was easy enough for baggage and supply trains to come up in the evening, and join their formations just before, or just after, dark. Now, however, this is all changed. Troops must, if they are to cover the same distances by night as they formerly did by day, be on the move for most of the night, and they will not arrive at their halting places until a short time before dawn. Transport probably cannot move till after dark, and during the hours of darkness it has not only to get up to its own formation, but it must be clear away and under cover before dawn breaks. Transport commanders will, moreover, be faced with great difficulties in the way of discovering the exact locations of the units they serve, and of following, in the dark, the routes leading thereto. The standard of training of transport officers and subordinates must be very high, otherwise it seems very doubtful whether this service can function properly throughout a long period of night movement, unless the distances which troops are required to march is very considerably reduced.

Not only do these night movements impose a very much higher standard of training on transport personnel, but even when movement by day is possible, a greatly improved standard of march discipline amongst the transport must be demanded. It can no longer wander at its own sweet will along the roads, and assemble in masses during halts. It must be accustomed to move clear of roads, in definite formations, and must be able to change these in a moment when the ground requires, or when attack from the air appears imminent. Further, this liability to hostile air attack demand a stronger discipline, to avoid confusion and panic when hostile machines appear.

After last year's Eastern Command manœuvres we commented on the difficulty of protecting refilling points and the like from attack from the air. This year's manœuvres have afforded little comfort in this respect. It is easy enough to say that the hostile air force in moving warfare will be too busy to undertake such comparatively unimportant operations as the attack on refilling points. In our opinion this is a fallacy. An army marches on its belly as much now as it did a hundred years ago, and in mobile warfare it may have to progress for days on that essential, but sensitive, part, of its anatomy. It appears to us that one of the most effectual forms of delaying action will be systematic attack on refilling points, and consequent interruption of the steady flow of supplies to the troops. Under Eastern conditions refilling points must be easy to locate, while they are very vulnerable to attack from the air especially when lorries or animal transport are parked in their neighbourhood. The lorries actually damaged can perhaps be replaced, but in our experience of mobile warfare in an Eastern theatre, to move at all, it has always been necessary to utilise every vehicle of every kind which can be made available, and spares have been practically non-existent. During such operations as we have taken part in, the loss of comparatively few lorries would either have seriously endangered the success of the whole operations or would at least have cramped the mobility of the force to an alarming extent.

It has been suggested that refilling should take place in the dark, and that mechanical transport should work entirely by night. The feasibility of this is however open to serious doubt. Roads in any Eastern theatre of war, where they exist at all, are bad, ill defined, and narrow. Movement of mechanical transport on them raises an almost impenetrable cloud of dust which completely blocks all vision, whether or not lights can be used. It may perhaps be possible to use mechanical transport at night at a slow rate of speed and with greatly increased intervals between the individual vehicles. We doubt, however, whether night work is possible as a normal method, and, if it is, it will demand a very high standard of training amongst the personnel of the mechanical transport columns.

Not only, however, does night movement take its toll of the physical fitness of the troops, but daylight movement also, when possible and desirable, becomes infinitely more arduous. Troops can no longer move with comparative ease in formed bodies and

in column of route. They must practically always move in extended formations and this implies far greater physical effort.

So greatly is movement hampered by the precautions necessary to counter observation and attack from the air that it would seem that the first rule of the air force in mobile warfare must almost always be to gain, so far as is possible, the command of the air. It seems to us that, given more or less equality in the air, the first object of the commander who proposes taking the offensive must be to concentrate the whole of his available machines in active attack on the air forces of his opponent. Until he has overcome these and obtained mastery over them, he will scarcely be justified in detaching a single machine for reconnaissance, or for attack on the enemy ground forces. Command of the air must be his first and most vital object, and he must concentrate every machine he has got, and every atom of energy on attaining it.

Those of us who had hoped to be able to see much of the handling of armoured cars on these manœuvres were bitterly disappointed. As a matter of fact the country is singularly unfitted to their use, and to all intents and purposes they were confined completely to the main roads. The result was a series of armoured car blocks which remained almost unaltered throughout the operations. Single forward guns were freely used by both sides, and it was easy to see how effective these would have been in country like this where armoured cars were confined to the roads. Such guns are almost impossible to locate where cover exists, and, keeping silent and masked until the decisive moment arrived, are very difficult to knock out by artillery fire. Where highly mobile anti-tank guns are not available the proper antidote to armoured mechanical vehicles appears to be the use of guns in this manner.

Although little mechanical transport, and few mechanical weapons are available in this country, sufficient were available to show the difficulty and careful staff work which is required to move a modern army, with all its different rates of speed, in such a manner as to give the power of cohesion and concentrated effort to the whole. This is a real difficulty, as anyone who saw Blue Force march tables will agree and can only be overcome by careful study and training. The same difficulty arose we believe on the recent manœuvres at Home, where endeavours to obtain close co-operation between Tanks and Infantry on mechanical transport failed.

We regret that owing to lack of material we have been unable, this quarter, to publish our usual column of Military Notes. It is hoped, however to carry on with this in future issues.

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The attention of all members who are working for examinations is invited to the statistics supplied, for examination purposes, by the General Staff, with regard to Tanks. These appear in the Secretary's Notes at page iii of the present issue of the Journal, and will be republished in the April number.

THE BOLSHEVIK MENACE.

By "*Mongolian.*"

General.—The existence of a Bolshevik menace to the world is now generally recognised, but opinions still vary considerably as to the extent and imminence of the danger. Until quite recently the British people in no way realised the position, which was serious from 1918 to 1921, but seemed to have improved between 1921 and 1924. The improvement was, however, only apparent and was mainly due to the internal difficulties of the Bolsheviks, which restricted their external activities during this period. It did not mean that they had in any way abandoned their aim of world revolution or their implacable hostility against the existing system of society, and more especially against the British Empire.

It may be asked why the Bolsheviks should wish to foment and spread rebellion throughout the world. The answer is clear and is based on certain main reasons. Firstly, some of the Bolshevik leaders are genuine fanatics, as was Lenin, imbued with a firm conviction that their doctrines are sound and to the benefit of humanity. Secondly, the factor of Nationalism enters into the problem; many Russians support their Soviet Government in the belief that this is the best way of extending Russian power and dominion. Thirdly, the most farseeing of the Soviet rulers realise that Bolshevism can hardly survive if all other countries hold aloof and adhere to their present system of government; they are, therefore, fighting to maintain their own position as the ruling class of Russia. These are the main reasons for the campaign in which the Bolsheviks are now engaged, a campaign whose aim is world revolution, with the destruction of the British Empire as the primary objective.

Bolshevik leaders like Lenin, Trotsky and Zinovieff have repeatedly and openly declared that Soviet Russia is at war with the British Empire, and such is indeed the case at the present time, although armed force is not actually being used. But there are weapons other than war ships, aircraft, guns, rifles, tanks and gas. The Great War gave ample proof of the value and power of propaganda, and this weapon, in the use of which the Bolsheviks are adepts, is now being used intensively against us. They are at present unable to meet us in the open field, in spite of their

vast armies and air forces, but both secretly and openly they are intriguing against us all over the world, doing their utmost to stir up rebellion and revolution in our own territories, and to mobilise other powers and forces against us, especially in the East.

It is an extraordinary situation. The Soviet Government pretends to stand aside, but in its other shape, as the 3rd International, is fighting against us everywhere with every weapon at its disposal, whilst we talk of trade, loans, agreements and friendly relations. It is true that the present British Government, or at all events most members of it, are fully alive to the danger. The Communist Party has recently been pronounced an illegal organization in a British Court of Justice, a great and welcome advance; but the great majority of the British people are only just becoming aware of the peril, just as they were deaf to the menace of German Imperialism in the years before 1914. The Communist Party in Great Britain, as in other countries, is undoubtedly a foul and criminal organization, for it preaches murder and revolution, and seeks to impose the rule of the minority upon the remainder of the people, by force and violence. In Australia, for instance, the recent seamen's strike and all the trouble connected therewith was caused by a Communist Party under 1,000 in strength.

To quote an Italian student of the subject, "To Bolshevism the British Empire is capitalism and imperialism personified, and the destruction of the British Empire is and must be its most important objective." The hatred of the British Empire felt and openly expressed by all thorough-going Bolsheviks may indeed be taken as a high compliment. If the protagonists of murder, revolution and anarchy regard us as their principal enemies, this is clear recognition of the fact that we stand in the foremost rank of the ordered and well-governed Powers of the world. In view, however, of this involuntary honour shown to us by the Bolsheviks, we must be all the more on our guard.

It is interesting and indeed essential for us to study how this situation has arisen and developed, to examine the methods now being adopted by the Bolsheviks, and to come to a conclusion as to how we are to protect ourselves.

The origin and growth of Bolshevism.—Bolshevism may be said to owe its origin to the bad and corrupt pre-war system of Government in Russia, and its development to the duration of the War and its mismanagement by the Russian bureaucracy. The

hardships and miseries of the War supplied a fertile soil for the growth of the plant, which might have perished in 1919, at all events in all countries except Russia, but managed to survive and even to flourish in consequence of the short-sighted and unstatesmanlike vindictiveness of the Peace Treaties and the hatreds and jealousies which followed the end of the Great War.

From the autumn of 1918 to the spring of 1921, Europe was in a dangerous state. For a time Communism was victorious in Bavaria and Saxony, whilst Prussia might have been under the heel of Bolshevism, had the Spartacist leaders been men of the calibre of Lenin and Trotsky. Hungary went Red, and suffered a Reign of Terror for three months under Bela Kun and Samuely, being rescued eventually by a Rumanian invasion. Austria went through a long period of chaos, whilst victorious France and Italy were only saved by the firmness of Briand in the one case and by the vigorous patriotism of Mussolini and his Fascists in the other. Except in Russia, sane counsels prevailed throughout the world, and but for the troubles caused by the Greek invasion of Asia Minor, and by the French occupation of the Ruhr and their general implacable hostility towards Germany, there would have been a reasonable prospect of a peaceful settlement and of a return to normal conditions by 1922.

In 1919 the White Armies under Kolchak, Denikin and Yudenitch were fighting against the Red forces of Lenin and Trotsky, and victory was nearly within their grasp. The Bolsheviks owed their ultimate success partly to their central position, which enabled them to act on interior lines, and partly to the political honesty and almost excessive scrupulousness of Kolchak and Denikin, who refused to give any guarantees which they were not absolutely certain a future Russian Government would ratify. In the interests of the unhappy Russian people, who had fought so loyally for the Allied cause, considerable assistance was given to the White leaders; but war weariness and the opposition of the Labour Parties, especially in France and Great Britain, caused this assistance to be half-hearted and inadequate. In 1919 and 1920 the nations of the world were too closely occupied with their own affairs to intervene seriously in those of other countries, and moreover it was generally assumed that, like the Germans, Hungarians and Italians, the Russians would eventually be able to set their own house in order.

In the subsequent years, by a combination of energy, cunning and ruthless cruelty, the Russian Communist Party have

maintained their position, and although they have found it necessary to abandon many of the tenets of strict Communism, they still hold the reins of Government. The rule of the Communist Party, a small minority of considerably less than a million in strength, over a nation of some 130 million inhabitants, is indeed one of the most extraordinary events in the history of the world and would be impossible except with a docile and ignorant people, only recently freed from serfdom and lacking in spirit and determination. The Bolshevik leaders are men of considerable energy and ability, who have made excellent use of their weapons, especially those of food control and espionage; throughout their régime, in the years of shortage and famine, they controlled the food supplies, and this control was their strongest weapon.

Thanks to the strength and determination of the Soviet rulers, a comparatively stable, though entirely despotic Government now exists in Russia and, so thorough and skilful are the measures taken to maintain it, that it appears extremely doubtful if the Russian people will be able to throw off this oppressive yoke. It is therefore of importance to examine the present system of Government in Russia, and its motive powers.

The present Soviet Government of Russia.—Russia is actually governed by the Polit-Bureau, which is a kind of Inner Cabinet, and includes men like Bukharin, Zinovieff, Kameneff, Rikoff and Stalin. These men, all of whom are extreme Communists, are also in direct control of the 3rd International, an organization founded in 1919, which has declared war on the British Empire. As the policy of both the Russian Government and the 3rd International is controlled by the same individuals, it follows that their aims are practically identical. It is true that a section of the Soviet leaders realise the difficulty of carrying on the Government and foreign policy of Russia whilst she is practically at war with the most stable and powerful countries of the world, but they are over-ruled by their extremist colleagues. Although the U. S. A. still hold aloof officially, France, Germany, Italy and Great Britain have all recognised the Soviet Government; and there are Soviet representatives in Paris, Berlin, Rome and London; these delegates are accompanied by numbers of trade agents, whose primary duty is to agitate against the Governments of the countries in which they are employed, and to stir up mutiny and revolution.

Men like Chicherin and Trotsky are no less ardent Communists than Stalin and Zinovieff, but they see the hopelessness

of developing the resources of their country without outside aid and, whilst being equally hostile to the "bourgeoisie" of foreign countries, prefer to seek their financial and economic assistance before destroying them. The fanatical Communists, men of the type of Stalin—the present head of the Russian Communist Party—and Zinovieff, refuse to temporise; they believe in war to the knife, and all their utterances show their implacable hatred of all parties and creeds other than their own.

The theory of Communism and of Bolshevism is to organize all the resources of a country for the common good, and to ensure the equality of all people. Such a system may sound well in theory, but in practice it is unsound and unworkable, for it would destroy all individualism, and turn humanity into a mass of machines. It involves the strongest discipline, for it is impossible without the whole-hearted co-operation of all its members, all of whom must carry out their respective tasks efficiently and thoroughly if the entire machinery is to work smoothly. So far, the rulers of Russia have managed to maintain fairly strong discipline by their methods of terrorism, assisted by the lack of individualism among the Russian people, although they have been obliged to abandon many of the principles of Communism, only temporarily, as they say.

The Communists preach the gospel of freedom, especially of the "toiling masses." In reality there is no freedom whatever under their rule, which is the complete negation of liberty. No opposition of any kind to Government is allowed in Russia; criticism in the Press is strictly forbidden, and even the expression of any verbal disapprobation of official action is liable to be severely punished. The liberty of the individual has completely disappeared, and Russia has merely exchanged the autocratic rule of the Czars for the far harsher tyranny of the Polit-Bureau. Only Communists can become State officials or Army officers or can be elected to the Russian Parliament. It is true that many non-Communists of the old régime are employed on official work, both civil and military, but they are watched very carefully, and in many cases their families are held as hostages; all new appointments are made from the ranks of the Communist Party.

A real attempt has been made to develop education, and the standard of literacy in Russia has been raised considerably. The main object is of course to perpetuate Communism, and all education is on Communist lines. All children are taught

Communist doctrines only, which means that the future generation in Russia will have been brought up as Communists.

Whilst we may pity the Russian people for their tyrannical form of Government, the time for our intervention has passed. In 1919 and 1920 it appeared clear that the bulk of the Russian people did not desire Communist rule, and many of us regarded it as our duty to help our late Allies to obtain a sane form of Government. Intervention is no longer possible, and for more than four years we have accepted the present Soviet Government as an accomplished fact, or as all events as an inevitable evil. Whatever we may think of it in our hearts, whatever we may say of it within our own borders, we carry out no anti-Bolshevik propaganda abroad, whether in Russia herself, or in other countries. The curious and unprecedented position exists, however, that the official agents of a country with which we are at peace, are busily engaged throughout the world in stirring up against us the hostility of all foreign Powers, as well as revolution among our own subjects. Although this is denied by the Soviet Government, who ascribe these activities to the non-official members of the 3rd International, such is nevertheless the truth. All over the world, Bolshevik agents are inciting the people against Great Britain, although their activities are disowned by the official utterances of the Soviet Ministers, and conveniently attributed to the 3rd International.

The Bolshevik Programme.—An examination of Bolshevik methods and policy leads us to the conclusion that the present programme of Soviet Russia consists of internationalist agitation in Europe America and Australia, combined with nationalist intrigue and propaganda in Asia and Africa. In the West the slogan is "Victory to the toiling masses of workers against the bourgeoisie and capitalists." In the East the war cry is "The liberation of the oppressed peoples of Asia and Africa from the Imperialist domination of Great Britain and other European countries." This policy is clever, for the cry of Internationalism and atheism would have little chance of success in the East, where monarchic traditions and religion are generally strong. What do our Indian friends think of modern Bolshevik atheistical doctrines, as exemplified by their disgusting illustrated newspaper the *Bezbojnik* "or "Godless," which holds up Mohammed and Buddha to ridicule equally with Christ and God!

The state of the world has favoured the Bolsheviks in the past seven years, as a result of the exhaustion and misery caused by

the War, the harshness of the Peace Treaties, France's treatment of Germany and the general restlessness in Europe. There was the serious danger that Europe would not be allowed to settle down, and that the quarrels of the Great War would be perpetuated; this would have led inevitably to world disaster. Locarno has come like the rising sun to clear away the mists of a grey and unpromising dawn, and at last there seems to be some hope of clear and fine weather, though clouds may still sweep across the sky. It is essential to have Germany on the side of law and order, and it was crass stupidity and bad statesmanship to have exiled her for so long from the councils of Europe. After 1917 the real and immediate danger to the world was from Bolshevism and not from Imperial Germany, who had shot her bolt.

After the Great War we needed Germany's help against Bolshevism, just as, in 1870, Bismarck needed the neutrality of Austria, and the co-operation of the South German States against France. And just as in 1866 it was true statesmanship to impose lenient terms on the conquered, so we should in 1919 have thought more of the future and less of our immediate feelings of hatred and revenge.

Bolshevism is inevitably opposed to the peace and settlement of the world. As soon as the Locarno negotiations appeared likely to come to a successful conclusion, the "health" of M. Chicherin necessitated his paying a visit to Berlin, where he did his best to prevent an agreement. It is to be hoped that the ratification of the Locarno Pact will enable Europe to settle down and return to more normal conditions, thus diminishing the danger of Bolshevism. Russia has recently been tending more and more towards the East: the Locarno Pact is likely to hasten the transfer of her centre of gravity from Europe to Asia. The Jewish rulers of Soviet Russia have long believed that India is the Achilles heel of the British Empire, and are therefore constantly aiming at her, through China, Persia, Turkey and especially through Afghanistan. The Locarno Pact will probably mean the concentration of Russia's main effort against India, and the attempted mobilization of East against West, and this appears to be the main danger of the British Empire and of civilization in the near future.

The Asiatic Policy of the Soviet Government.—The Asiatic policy of the Soviet Government is astute and of considerable interest. Whereas they aim at class warfare in Europe, they utilise racial and religious feelings and prejudices in Asia and

Africa. They pose as the friends and champions of oppressed Eastern peoples against Western Imperialism, in China, in India and in the Moslem States lying between India and the Black Sea. Their creation of a Union of Socialist Soviet Republics is a particularly ingenious idea. The object of this federation of so-called autonomous Republics is to form a world-wide organization, which will gradually extend the frontiers of Russia and of Bolshevism. The Republics on the outlying frontiers of Russia can all, very naturally, claim a certain number of co-nationalists beyond the limits of their own States; for instance, there are many Tajiks in Afghanistan as well as in the Soviet Republic of Tajikistan. The intention is to utilise these border Republics to extend the frontiers of Russia and to seize every opportunity to weaken the neighbouring Powers and to cause their disintegration. The methods employed consist of nationalist propaganda, working on ethnographical grounds, with a complete disregard for existing topographical frontiers, and combined with steady intrigue and propaganda against the existing régime. A good example of this process is to be found in the absorption of Mongolia, which is now to all intents and purposes a province of Russia. Another example is afforded by the intrigues now in progress in Sinkiang and Chinese Turkestan, where Bolshevik officials and so-called trade agents, from Urumchi to Kashgar and Yarkand, are working hard to detach these provinces from China. Further West, the Republics of Tajikistan, Uzbekia and Turkmanistan afford a good pretext for penetration into Afghanistan and Persia, and it is feared that these efforts, especially in Afghanistan, are meeting with some success. Similar methods are being tried in Europe, where the frontiers of the Soviet Republics of Moldavia, Ruthenia and White Russia overlap those of Bessarabia and Polish Galicia.

Bolshevik intrigues in China and their menace to Japan.—China may be said to be the only Eastern country in which the doctrines of Communism have made any real progress; the Central Government had lost its control over the people, and Bolshevik intrigue and propaganda had a clear run, and were able to play a great part in assisting to plunge the whole of this huge country into civil war and chaos. Although the Bolsheviks have met with considerable success in China, their policy here appears to bring them definitely into antagonism with Japan. At one time they were anxious to make capital out of the supposed hostility between the U. S. A. and Japan, and hoped that the construction

of the Singapore Naval Base—a purely defensive measure—would disturb the traditional friendly relations between Japan and Great Britain. The Russo-Japanese trade agreement seemed to promise some hope of a rapprochement between the two countries, with a corresponding coolness between Japan and Great Britain.

It was soon shown that the statesmen of Japan were too wise and too mindful of the interests of their own country to be misled by Russian intrigues. And indeed it seems clear that Japan, one of the best governed countries in the world, cannot be in the same camp with Bolshevik Russia, who aims at universal disruption and revolution. The present Communist agitation in China, which is largely due to Russian intrigue and propaganda, is entirely contrary to Japanese interests. The Russians regard Korea as the Achilles heel of the Japanese Empire, and Korea is now the centre of their anti-Japanese intrigues and revolutionary propaganda. It is obviously impossible for Russia to sovietise China, and to incorporate her in the Soviet system, under Russian influence and control (like Mongolia), without antagonising Japan, who cannot afford to see China, her best market, absorbed by Russia. And so, unless the Soviet leaders abandon their policy in China, which is unlikely—*vide* the appointment of new Russian Consuls General in Sinkiang (Urumchi) and Chinese Turkestan (Kashgar)—it seems inevitable for Japan and Russia to become deadly enemies: the forces of law and order against those of murder, revolution and anarchy.

Intrigues in other Asiatic countries.—In other Asiatic countries Bolshevik intrigue has been at work, with varying degrees of activity and success. Large sums of money have been devoted to intrigue and propaganda in India, but with little or no success as far as the spread of Communism is concerned; the main object in this country is at present the fomentation of anti-British agitation and the promotion of revolutionary feelings.

Bolshevik agitators have been busy in Arabia, Mesopotamia, Burma, Siam, the Dutch East Indies, the Malay States and in French Indo-China, but in most cases without much success. Countries which have hitherto been almost entirely spared from Bolshevik intrigue are Nepal, Tibet and Bhutan, but even these are not likely to enjoy this fortunate privilege for much longer.

It is in the three Mohammedan countries of Turkey, Persia and Afghanistan that the Bolsheviks have been especially active in their attempts to promote hostility against Great Britain. They argue that the League of Nations is primarily a Christian

organization, and that the interests of Mohammedan peoples cannot be safely entrusted to it. They have done and are doing their best to persuade the Governments of these countries that Great Britain is the enemy of Islam, and that Mohammedan nations must unite with Russia against her.

In Turkey.—In Turkey conditions favoured the Bolshevik schemes, partly owing to our relations with Greece between 1919 and 1922 and, recently, owing to the Mosul dispute. The Soviet Government are at present encouraging the Turks in their refusal to abide by the decision of the League of Nations in the Mosul question, and are doing their best to bring about war between Turkey and Great Britain. Mustapha Kemal and his Government are of course fully alive to the dangers of Bolshevism, but in a dispute with us it is naturally of value to be able to count on Bolshevik support: at the same time the Turkish leaders will do well to reflect upon the danger of invoking the armed assistance of Bolshevik Russia, who is just as anxious to occupy Constantinople as was the Government of the Czars.

In Persia.—In Persia the task of the Soviet representatives has been two-fold; firstly, to stir up hostility against Great Britain; secondly, to bring about the disintegration of the country, and to shepherd it into the fold of the United Soviet Socialist Republics under the aegis of Russia. In the first part of their task the Bolsheviks were assisted by the unpopularity caused by the Anglo-Persian Convention of 1920 and by certain measures which became necessary during the Great War, *i.e.* the establishment of the East Persian Cordon and the raising of the South Persian Rifles. Although these measures were dictated by purely military causes, and were in no way aimed at the sovereignty or independence of Persia, they aroused a certain amount of suspicion in Persia, thus favouring the Bolshevik designs. In the last two years, however, there has been a marked change, and Persians are now beginning to realise that we are their best friends and that we are genuinely anxious to see Persia regain her old position as a strong Power.

The advent of Reza Khan has frustrated, at any rate for a time, the second part of the Bolshevik task. He has recreated the Persian army and strengthened the government to such an extent as to render it impossible for Bolshevik plotters to cause a revolution in the near future and to turn Persia into a Communist Republic, a rôle for which she is totally unsuited.

The policy of the Soviet in Persia is clever; they have not been slow to realise Reza Khan's supremacy, and although they lose no opportunity of working and intriguing against him in secret, they profess friendship for him in public and pretend to support him. Now that the Kajar dynasty has come to an end, the Bolsheviks will no doubt recognise that nothing can safely be done in the near future to overthrow the present régime and, whilst not abandoning their projects of sowing the seeds of ultimate revolution, will do their best to enlist Reza Khan as an ally against Great Britain. In this project it is hardly likely that they will be successful, as Reza Khan is an astute ruler who understands them well and will not be deceived by their professions of friendship.

In Afghanistan.—It is in Afghanistan, however, that the Russians are most active and where they hope to do us the greatest harm. Here their policy was at first aimed principally at the disintegration of the country, and the Republics of Tajikistan, Uzbekia and Turkmanistan were eventually to absorb all Northern Afghanistan. This plan appears to have been temporarily postponed, and the Bolsheviks are now working hard to win the Afghans over to their side with a view to gaining their co-operation against us. With this object large subsidies, mostly delivered in kind, are being given to the Afghans: telegraph lines are being erected all over the country, roads are being constructed, large quantities of arms and ammunition are being supplied, whilst an air force with Russian pilots and mechanics has already been created and is in process of further development. In return for all this, the Bolsheviks have already received important trading concessions, whilst their penetration of the country, especially of Northern Afghanistan, enables them to strengthen their position with a view to the future absorption of the country as far South as the Hindu Kush.

On the whole, it must be confessed that the Russian cards have been played with considerable skill by the present Russian Minister at Kabul, Comrade Stark, who is undoubtedly a cunning intriguer. He has succeeded in persuading the Soviet Government to hand over a great deal of material to the Afghans and has strengthened Russia's position considerably in Afghanistan. The question is, to what extent he has succeeded in deceiving the Amir and his ministers as to the real intentions of Soviet Russia. It is inconceivable that such astute men can be deceived by Russian professions of friendship, and there seems no doubt that a battle of

wits is in progress*. The Soviet Government is presenting Afghanistan with considerable gifts in order to gain her over, and at the same time to strengthen her, as an ally against the British Empire. This appears to be the primary objective, but it is of course the ultimate intention to absorb Afghanistan and to convert her into a Soviet Republic under Russian control, like Bokhara or Mongolia. It is only natural that the Amir should be ready to take all he can get for nothing, and from our point of view there can be no objection to the strengthening of Afghanistan, provided she does not pass entirely into Russian hands. The danger is that the Amir may allow Russian influence to become too strong and to permeate the whole country. For the numerous Russian traders and engineers now employed in Afghanistan, probably some 150 in number, are all Soviet agents, either actual or potential, and they are adepts at intrigue and propaganda, whilst they have ample funds at their disposal for the bribery of Afghan officials and others. No doubt the Amir considers himself strong enough to control this Russian penetration and he may be aware of Russian designs. The danger—and it is a serious one—is that he may be lulled into a sense of false security, out of which he may awake to find himself forced by his Bolshevik "friends" into a disastrous war with Great Britain, or to the discovery that the Bolsheviks have absorbed Northern Afghanistan as part of the republics of Tajikistan, Uzbekia and Turkmanistan. From the point of view of the Bolsheviks, their money would of course be well spent if it meant getting Afghanistan to fight their battles for them.

A war against Great Britain would be entirely contrary to Afghan interests; their defeat would be inevitable, and the extent to which our victory would be followed up would be the only question. For us, on the other hand, a war with Afghanistan presents no possible advantage; we want none of her territory, and it is most important for us that she should remain a strong and stable State: our victory might easily involve the collapse and break-up of Afghanistan, which would be to the advantage of Russia, who must necessarily be the only gainer in a war between Great Britain and Afghanistan.

* The true Russian attitude towards Afghanistan was displayed during the recent frontier outrage on the Oxus, when Russian troops invaded and occupied the island of Utra-Tagai hitherto always recognised as Afghan territory and killed the Commander of an Afghan post, besides inflicting a number of other casualties.

Apart from the extension of Bolshevism throughout the world, the desire of the present rulers of Russia to effect the conquest of India is no less strong than that of the old Czarist Government. Persia and Afghanistan bar the way, and it is the Soviet policy to absorb these States sooner or later, though it is likely to be more convenient first to use them in the struggle against the British Empire, thereby weakening them and rendering them an easy prey.

Bolshevik attempts to gain Islam as their ally would, if successful, constitute a most unnatural alliance between a totally irreligious creed and one of the strongest religions of the world's history. In reality, Russia, the enemy of Western civilization, is equally the foe of religious Asia.

Imperial Japan, a natural enemy of Bolshevik Russia.—The aim of the Soviet leaders is now to mobilise the East against Europe and against the European system; this plan involves the inclusion of Japan as an enemy of Russia. Although an Asiatic Power, Japan is organized on the same lines as the nations of Europe; all her interests lie on the side of law and order, and it is inconceivable that the Government of the Mikado will agree to an alliance, or even to the acceptance of friendly relations, with Soviet Russia and a Communist China; just as Bolshevism is wholly opposed to the Japanese system of government, so is Russia an unchanging enemy of the Japanese Empire, and how can Japan welcome, or even tolerate, a Communist China under the influence of Soviet Russia? The Chinese markets would be closed to Japan, whilst a Communist China would constitute a constant menace to Imperial Japan.

Summary.—It appears clear that, unless Bolshevik rule comes to an end from internal causes, or a radical change takes place in their methods of dealing with foreign countries, an armed conflict between Bolshevik Russia on the one hand, plus its willing or unwilling allies or dupes, and the British Empire on the other side, with or without allies, must become inevitable. The present system of war by intrigue, propaganda and revolutionary incitement cannot be continued indefinitely. Russian policy is now as active and aggressive as ours is pacific and defensive; this cannot go on for ever. We want peace, and desire no extension of our present frontiers in any part of the world. We do not like the Bolshevik system of government, or rather misgovernment, and we pity the wretched

people who suffer under Bolshevik tyranny. But we do not intervene in the internal affairs of Russia, nor do we attempt to stir up any hostility against the Soviet Government either among their own subjects, or among those of any other nation. We seek no conflict with Soviet Russia, nor with any other Power.

If the Bolshevik rulers will abandon their attempts at world revolution and their intrigues and propaganda against the British Empire, friendly relations are still possible between their people and ours. If not, war appears to be inevitable, and the writer is confident that, if this war is forced on us, Great Britain will not stand alone as the champion of the forces of law and order against those of murder, revolution and anarchy.

THE BATTLE OF KUT-AL-AMARA.

27th and 28th September, 1915.—I.

by

Major-General Sir W. D. Bird, K.B.E., C.B., C.M.G., D.S.O.

(This account is based on the War Diaries, the British Official History, and information that was obtained from officers who took part in the battle.)

For two and a half months after the battle of Shaiba¹ the military measures that were taken by the British in Mesopotamia met with almost uniform success. Amara and Nasiriya were captured, Arabistan was swept clear of the enemy, and a British force was moved to Ali-al-Gharbi on the Tigris, about one day's steaming from Amara. Victory of course arouses pleasant emotions, and "excited feelings make us wrongly estimate probability; and they make us wrongly estimate importance." This, then, was perhaps one of the reasons why, on the 27th July, 1915, the Viceroy of India sent to the India Office a telegram, which contained the following words: "Now that Nasiriya has been occupied, (by a force under Major-General G. F. Gorringe) the occupation of Kut-al-Amara is considered by us to be a strategic necessity." A correspondence then ensued between the authorities at Home, in India, and in Mesopotamia; in the course of which Lieutenant-General Sir John Nixon, who was now commanding the British force in Mesopotamia, stated that, while Nasiriya would still be held by a garrison, he contemplated placing two infantry brigades (out of the six that were under him) in Kut-al-Amara after its capture, and one in Amara. Finally, on the 6th August, the Secretary of State, India Office, telegraphed to India: "I concur in course of action proposed by Nixon and recommended by you.....;" but this approval was subject to any change in the arrangements that might be required on account of the activities of German agents in Persia. It was found that a change of plan was not necessary², and General Nixon was informed, on the 22nd August, that sanction had been given to his proposals. (Map. 1).

NOTES:—(1) Narrative published in this Journal in April, 1925.

(2) A Russian force was landed in September at Enzeli, a Persian port on the southern shore of the Caspian Sea.

Meanwhile, in order that the troops might be ready to advance again up the Tigris as soon as these questions of strategy had been settled, land transport had been moved from Arabistan and Basra to Ali-al-Gharbi as fast as the small number of river steamers and barges or lighters at the disposal of Sir John Nixon could carry it; and an order was also issued to the headquarters of the 6th Division that a plan was to be made for the concentration of the division, the bulk of which was holding Amara and the places to the north of it, at Shaikh Saad.

No other definite steps in preparation for the advance were taken, however, until the return of Major-General C. F. Townshend, the commander of the 6th Division, at the end of August from sick-leave in India. This Officer rejoined his division on the 28th August, after spending some days at General Headquarters at Basra for the purpose of discussing the situation with Sir John Nixon. And it is probable that he then heard that, in Sir John's opinion, if the capture of Baghdad were to become an objective of the British, it could best be effected as the culmination of a vigorous pursuit after a victory. General Townshend also received definite instructions that he was to effect "the destruction and dispersal of the enemy, and the subsequent occupation of Kut-al-Amara;" and was told that the 6th Division, with 32 guns, would be placed under his orders for this purpose, and that he would be assisted by a small Naval flotilla. As had been done before the very successful attack on the 31st May on the Turkish positions to the north of Kurna, Townshend was also directed to submit to the Headquarters of the Force a plan of operations against the Turkish forces that were holding lines of entrenchments covering Kut-al-Amara; and he was, in addition, to forward a statement in regard to the instructions for reconnaissance that would be issued to the airmen who would be sent to him.

The distribution of the British forces that were under the General Officer Commanding-in-Chief in Mesopotamia was now as follows:—At Bushire, on the Persian Gulf, there were about 1,500 men, with 5 guns that had been captured from the Turks; there were about 3,000 troops at Basra; Kurna was held by 350, and there were 800 cavalry at Ahwaz. The garrison of Nasiriya amounted to about 4,500 men with 10 guns and 2 aeroplanes; at Kala Salih there were 600 men; at Amara were the 17th and 18th Infantry Brigades and other units, some 7,000 men with 12—18 pounder field guns, 4—5 inch howitzers, and 2—4 inch guns; and at the advanced post of Ali-al-Gharbi were the 16th Infantry Brigade

and other troops, under Major-General W. S. Delamain, that is about 4,000 men with 6 field guns and 2—4 inch guns; and this force was supported by armed Naval vessels, while others patrolled the rivers between Kurna and the places in advance of it. Only 17 steamers, 10 of them quite small, were available for the whole service of transportation on the rivers, which were the only lines of communication of the troops.

Sir John Nixon's small army, then, was spread out over a large area. Since the offensive was to be undertaken the concentration of the largest possible number of troops on the Tigris front was, however, evidently a thing to be desired; for, as is pointed out in the Field Service Regulations, Volume II, "concentration of superior force, moral and material, at the decisive time and place" is essential for the achievement of success. The word concentration must, nevertheless, be interpreted in relation to proper economy, that is to the careful employment of resources so as best to meet the imperative needs of the situation. And to concentrate in one locality while stripping others of troops may result in a state of affairs similar to that which occurs when a heavy dome is placed on pillars that are too weak to support its weight; and this certainly cannot be termed economical. It was obviously essential to safeguard freedom of movement on the lines of communication, for on this depended the well-being and fighting power of the army. An increase in the size of the force stationed at and above Amara could therefore only be effected by reducing the strength of the garrisons of Basra and Nasiriya. As regards the first, Sir John Nixon would have been less than prudent had he failed to keep, under his own hands, a small reserve with which to meet unexpected events, either on the Karun or Euphrates, or at Bushire. Nasiriya, however, was apparently not in immediate danger of being attacked by the Turks, for the majority of the Turkish forces were standing at Kut-al-Amara, which is at least 100 miles away. There were, it is true, now at Shatratt and Samawa about 1,500 stragglers of the troops that had been beaten at the battle of Nasiriya; and there were rumours of the presence of other units in the areas higher up the Euphrates, which were, perhaps, portions of a detachment that had been sent in June to quell disturbances at Karbala and Najaf; but these were not likely for some time to trouble the British. It was also not probable that the enemy would advance from Kut-al-Amara against Nasiriya, for it was known that the Shatt al-Hai in its lower reaches had now ceased

to be navigable, and in these circumstances, larger quantities of land transport than were possessed by the Turks would be required for such an enterprise. Apart from the fact that the presence of British troops at Ali-al-Gharbi and Amara would necessarily deter the Turks from attacking the force at Nasiriya, for if they did so a thrust towards Kut-al-Amara would cause them to swarm back towards the Tigris for its defence, it was, for the moment, therefore, improbable that the enemy would advance against Nasiriya; and the local Arabs, who were inclined to be hostile rather than friendly, were not likely to take really formidable action against either Nasiriya, or Basra and our communications from it to the sea, without backing by the Turks. Difficulties as regards transportation put out of the question any idea of a converging movement by the British from Nasiriya and Ali-al-Gharbi in the direction of Kut-al-Amara. It seems, then, that a reduction, an economy—and it is economy so to use resources that they will go as far as possible—might have been made in the strength of the garrison at Nasiriya, with the object of concentrating as large a force as possible for the advance up the Tigris. This reduction was eventually carried out, and two battalions of the 30th Brigade, which were at Nasiriya, were moved over to join the other battalions on the Tigris front, but only two battalions of the 30th Brigade took part in the battle for Kut-al-Amara; and as these were without transport, it may be that only want of shipping and land-transport prevented Sir John Nixon from placing a larger force at the disposal of General Townshend.

The disposition of the troops that were standing on the Tigris is also at first sight open to criticism; for the despatch of a small body of men to Ali-al-Gharbi was certainly hazardous in appearance, since the Turkish force at Kut-al-Amara, could, if it were efficient, probably have attacked this detachment before the units at Amara could have come to its assistance. The enemy's troops, however, were under the influence of the serious reverse that had recently been experienced at Nasiriya; and although it was not impossible that so daring an enterprise might be undertaken by the Turks, it was not likely that the attempt would be made. And rightly to estimate the extent to which the movements of the enemy's forces will be affected by the good or bad spirits of the Officers and men, and to take action accordingly, is the highest part of war. As the advance towards Kut-al-Amara was contemplated it was desirable, on the other hand, that troops should be pushed forward for the purpose of covering the forma-

tion of the magazines, and the improvement of the tracks that would be used by the 6th Division as it went forward; so that when made the advance could be carried out so quickly as to surprise the Turks.

When General Townshend reachend Amara on the 28th August, he found that only 166 pack-animals, 48 draught-animals and 24 carts were available at that place. A demand was sent, in consequence, to General Headquarters for 450 pack-mules, 150 carts and 300 draught-animals, which would be required, in addition to the transport at Ali-al-Gharbi to make the force under his command mobile to the extent of having at disposal the 1st and 2nd line regimental transport. This demand was answered by representations from General Headquarters to the effect that the despatch of carts and animals would delay the commencement of operations for a fortnight, that is allow the enemy 14 additional days in which to bring up reinforcements and strengthen their positions; and although draught bullocks were provided for the movement of certain so-called heavy guns, Townshend eventually found himself short of what had been asked for by 300 mules. Delamain, however, succeeded in obtaining at Ali-al-Gharbi a sufficient number of camels, pack-bullocks, pack-cows, and donkeys, to make good the deficiency.

While these difficulties were being surmounted the enemy's cavalry showed a little activity, patrols being encountered by our Naval steamers within 10 miles of Ali-al-Gharbi. On the other hand the Turkish cavalry were on one occasion attacked and driven off by a section of the Bani Lam Arabs, who inhabit this area, that was now friendly to the British.

In accordance with the instructions that had been given to him at General Headquarters Townshend had, about the 28th August, submitted a plan of operations to General Nixon in writing; and two days later he had also informed Sir John that, if successful in routing the enemy, the pursuit would be carried out both by water and on the land. If Ctesiphon were reached by the pursuing forces the troops would remain there, but a reconnaissance of Baghdad might then be carried out by the Naval flotilla.

The plan that had been drawn up by General Townshend was, in outline, as follows: The 17th Infantry Brigade (1) would first be sent in steamers from Amara to Shaikh Saad, (this was not done in the end) a place some 24 miles beyond Ali-al-Gharbi, where

NOTE ¹—See Appendix.

it would act as advanced guard. The 16th Infantry Brigade would then be united with 17th as quickly as possible, and the rest of the force would move forward under their protection. When the whole had been concentrated at Shaikh Saad, the distance by land to Kut-al-Amara, 30 to 35 miles, would be covered in three days; the main body marching up the left bank of the Tigris, but some of the heavy guns and of the troops would be kept on board ship.

It was at that time believed that the enemy were holding a position astride the Tigris, near a locality known as Es Sinn, some 7 or 8 miles below Kut-al-Amara. (Map 2). This force probably consisted of 5,000 Arab soldiers, with Turkish Officers, 1,000 Turks, and 12 guns; but the *moral* of the men was said to be low, and it was thought that they would not offer a strong resistance to the British. The entrenchments, which were on both sides of the Tigris were extensive and covered a total frontage of 12 miles. On the right bank they ran out into a flat, waterless plain, and were garrisoned by 3 battalions with 6 guns; on the left bank the works lay between the Suwaikiya, a great marsh, and the river, and were held by 4 battalions with 6 guns. There were also about 4 battalions with a couple of guns on the left bank at Guwam, 2 or 3 miles behind the position, where a bridge of boats had been made and a ferry was working. Drinking-water was apparently pumped up to the trenches from the Tigris. The tracks leading from Baghdad towards Kut-al-Amara, and from the latter towards Shaikh Saad, were being levelled and cleared of scrub, and ramps were being made in the numerous dry canals that were crossed by them. (Map 1).

As regards reinforcements, reports had come in that there were 8 battalions of recruits, with 2 guns, at Baghdad; and 500 infantry, with 5 guns, were at Ctesiphon, where entrenching was in progress. The only other reinforcements likely to reach the enemy might be drawn from a body of 3,000 men that was said to be at Khanikin on the border of Persia; or from a dozen battalions rumoured to have arrived from Armenia, on the 9th August, in Mosul which is 250 miles distant from Baghdad. There were also reports as to the despatch of a Turkish force from Syria to Mesopotamia.

Bearing all these factors in mind Townshend proposed to envelop and destroy the left wing of the Turkish army, which was covering the best of the routes to Baghdad. The troops that were on the right bank would be ignored, as it was anticipated that they would inevitably retire when it was seen that the left wing

had been rolled up. This plan was, he said, of course subject to alteration should such a contingency arise as, for instance, the arrival at the front of the battalions reported to have been at Mosul early in August; although it did not seem likely that such a diversion of force would be made from Armenia, where the Turks had recently been defeated by the Russians.

The first question that anyone who reads this narrative will probably ask himself is whether General Townshend should have been ordered to submit his plan of action to the Commander-in-Chief? It is stated in the Field Service Regulations that, "an operation order must contain just what the recipient requires to know and nothing more. It should tell him nothing which he can and should arrange for himself, and especially in the case of large forces, will only enter into details when details are absolutely necessary." And from these words it might be inferred that a subordinate would then be left to carry out the orders in the manner in which, as it seemed to him, effect could best be given to the intentions of the commander. It is, however, also laid down in the Field Service Regulations that: "Responsibility for the adoption, modification and revision of a plan of campaign rests with the Government;" and, as apparently happened often during the Great War, the plans of even commanders-in-chief are therefore subject to approval and alteration. The question, then, of the amount of freedom that is to be allowed to the executive commander is evidently one of great difficulty; for, on the one hand, it is plain that those who are responsible for the employment of resources must be conversant with the manner in which this is to be done; and, on the other hand, when he approves of a plan, the person in higher authority necessarily becomes to some extent responsible for its adequacy; and this may both weaken the self-reliance of the subordinate, and fetter his judgment as to the modification of arrangements in accordance with the pressing needs of the moment.

Little comment can now be made on a plan, like General Townshend's, that was drawn up so much in advance, was based on such data, and apparently was made without the assistance of even accurate maps; except to say that, when the mind is biassed in a certain direction, impulses constantly arise that tend to confirm and strengthen this tendency. Change of mind, therefore, becomes increasingly difficult.

The suppositions are, however, open to criticism that were made by General Townshend as to the reasons why the Turks had

placed themselves astride the Tigris: namely either because it was believed that the British were wedded to the system of attacks in front, which, for various reasons, had up to this time been made by them in the battles in Mesopotamia; or because they desired that a force should be on the right bank of the Tigris for the purpose of meeting an advance by the British from Nasiriya. As regards the second, Nasiriya, as has been pointed out, is more than 100 miles from Kut-al-Amara in a direct line. Since the Turks had, on several occasions, moved forces between the two places, they could not have been unaware of the time that was required to send troops from one to the other, and of the situation with reference to the navigability of the Shatt-al-Hai; and it is therefore improbable that the sudden appearance of a British force from Nasiriya on their right flank was anticipated. Contempt for the generalship of the enemy's leaders has more than once in the history of war led to unwise dispositions and consequent disaster; but to suppose that this influenced the Turks is to ascribe to them greater folly than was reasonably probable. The action at the Garmat Safha on the 5th July, and the battle of Nasiriya on the 24th of that month, had shown that, when troops are placed on each bank of even a wide stream, they can so effectively support one another as to oblige the assailant to engage both of the groups; unless the conditions are such that the outer flank of one of them can be attacked and enveloped. The Turks may, therefore, have argued that since the outer flanks of their entrenchments at Es Sinn were protected either by marsh or by the absence of water, the British, as heretofore, must follow one of two alternatives. They would either be obliged to make an advance on each bank of the Tigris, or they must allow to the defender the advantage of being able to deliver enfilade fire against the inner wing of the force that was making an attack only on one bank, and at the same time leave their shipping open to a counter-attack. Moreover, had the enemy held only one bank of the Tigris, the left for instance, the British, if advancing on both banks, could either have brought a converging fire to bear on the Turkish right, which might have been unbearable unless the trenches there were very efficient. Or the British could have left a detachment to hold the defile between the Suwaikiya marsh and the Tigris for the purpose of covering their communications, and, if the land transport at their disposal permitted them to do so, could have sent the rest of the force along the right bank to Kut-al-Amara; with the object of obliging the enemy either to quit their entrenched position, or, by coming in behind it, of

enclosing the Turkish army between the marsh, the river, and the two British forces. Again, if the Turks remained only on one bank of the Tigris, they would, for all practical purposes, have resigned even the small power of manœuvre that they possessed; and if the Turks decided that they must retain the power of moving freely on both banks of the river by means of a bridge over it, troops must be placed on each bank for the protection of the bridge.

While his plans were being considered at General Headquarters Townshend had been engaged in completing the preparations for the offensive; and these included a thorough sifting of the men who were in the hospitals and convalescent depôts. Troops also had been sent from Amara to Ali-al-Gharbi as fast as the river steamers could carry them.

The Turks, who were under a new commander, Nur-ud-Din Pasha, and who had recovered some of their confidence owing to the fact that the British did not at once follow up their victory at Nasiriya, now began to show activity, and this of course provoked retaliations by the detachment at Ali-al-Gharbi. On the 8th September, for instance, a sharp little fight took place 8 miles up river between a British force of two squadrons of the 7th Lancers, two guns of the 82nd Field Battery and one battalion, and a force of from 700—800 Turco-Arab horsemen, the enemy being obliged to retire. But two days later a group of 600 of the enemy's horsemen, 400 infantry and a couple of guns, supported by a number of tribesmen, was reported to be within 8 miles of the garrison of Ali-al-Gharbi, and did not fall back until the 11th.

Early in September Townshend had been warned that, owing to the unfavourable aspect of the political situation in Persia, a forward movement should be made so as to counteract a wave of feeling against the British that was apparently being produced among the Persians by the propaganda of the Germans and Turks. Since the bulk of his force had been concentrated at Ali-al-Gharbi, where an advanced depôt of supplies for 17 days had also been formed—an army, as Frederick the Great so often pointed out, moves on its belly—Townshend sailed, therefore, from Amara with the headquarters of the 6th Division on the 10th September; and on the next day he joined his troops at Ali-al-Gharbi in weather that, notwithstanding a strong northerly wind, was still very hot, the temperature in the tents—the troops were under canvas—being as high as 120° during the day.

The striking force (see Appendix) had now been organized in a series of self-contained groups. Of these Number 1 Group, under Major-General W. S. Delamain, comprised the 16th Infantry Brigade, two sections of the 22nd Company of Sappers and Miners, a Signal Section, and three sections of Field Ambulances; Number 2 Group, under Brigadier-General F. A. Hoghton, who was commanding the 17th Infantry Brigade, consisted of this brigade, two sections of the 17th Company of Sappers and Miners, a Signal Section, and three sections of Field Ambulances; Number 3 Group, under Major-General C. I. Fry, included the 18th Infantry Brigade, two sections of the 22nd Sappers and Miners, a Signal Section and three sections of Field Ambulances; Number 4 Group was composed of the Artillery—the 10th Field Artillery Brigade (less the 63rd Battery) consisting of the 76th and 82nd Batteries and Brigade Ammunition Column, and the 86th and 104th Heavy Batteries (the latter less one section) in barges—two sections of the 17th Sappers and Miners, the headquarters of the Divisional Signal Company, part of the Bridging Train, and the 48th Pioneers; in Number 5 Group were the Divisional Ammunition Column, the Engineer Field Park, portions of Field Ambulances, the Ambulance Ship P. 4. and an Ambulance Launch; the Divisional Supply Column formed a separate group; and the 7th Lancers, the Maxim Machine-gun Battery, and a Flight of 4 aeroplanes were available for allotment as necessary. The land-transport was only sufficient to provide 1st, and some 2nd Line, Transport for numbers 1, 2, and 4 Groups; the 1st Line, and part of the 2nd Line also, being supplied by the 12th, 26th, 30th and 32nd Mule Corps and the Imperial Service Corps; but the rest of the 2nd Line consisted of hired camels, bullocks, cows and donkeys. Number 3 Group had to be content with only 1st Line Transport the 2nd Line baggage being in steamers and barges. There were also in the force one motor ambulance and two motor lorries.

The advance towards Shaikh Saad began early on the 12th September, numbers 1 and 2 Groups, with two squadrons of the 7th Lancers, the 10th Field Artillery Brigade (less the 63rd Battery), two companies of the 48th Pioneers, two Ambulances (less six sections), and all the land-transport marching, under Major-General Delamain, in a dust-storm along the right bank of the Tigris to Bait Fahd, where a halt was made at 11 A.M. The day was again very hot, the area that was traversed was both covered with scrub and wrinkled with dry water-courses, and the troops had had but little practice in marching. Nevertheless only 67 men

fell out of the ranks. The improvised transport, when once on the move, also did as well as could have been expected, in view of the fact that the drivers were without experience of ordered movement in mass, and that the troops had little knowledge how best to load these animals. But the group system was not successful, as units of each group were soon scattered along the whole column. The bulk of the remainder of the force sailed in the river-steamers. These also carried tents and supplies for all the troops, and were escorted by the armed Naval vessels, the Comet, Shaitan and Sumana, and two launches that were towing horseboats containing four 4.7 inch guns.

During the early part of the day Townshend received ready homage from the Shaikhs of the Arab villages that were passed in the advance, who were anxious to conciliate the side that was attacking. As he was always desirous of seeing things for himself he then went in the Comet to Musa-al-Muhammad's village, which is 7 miles up river from Bait Fahd. Shots were now exchanged with a few of the enemy, and an occasional horseman was seen, but no signs of the Turks in force. Next day the advance was continued, the troops moving to Bait Hamid, in the Mandaliya reach 6 miles short of Shaikh Saad. Although the nights and early mornings were now comparatively cool, the heat was still very great in the middle of the day, the temperature in the tents, after the camp had been pitched on the 13th, being 116°. Only 34 men, however, fell out during this march, a fine testimonial to the disciplined endurance of the troops. Shaikh Saad was reconnoitered by our airmen both in the morning and evening, and in order to make certain of the security of the force, Townshend also steamed during the day close to the place in the Comet, but only saw half a troop of Turkish horsemen. Shaikh Saad was reached at 8 A.M. on the 14th September in a strong wind, which not only caused a dust-storm but drove all the ships aground; so that during the day the men were in great discomfort, and were also without food or shelter. In spite of the gale an airman flew from Ali-al-Gharbi over the enemy's position at Es Sinn, and on his return reported that there were no signs of the Turks on the right bank of the Tigris. One hundred and thirty tents had been counted on the left bank, where there were emplacements for guns but no weapons; and a couple of steamers, a tug and some barges were lying at Kut-al-Amara. From this report it might be inferred either that the Turks had to a large extent abandoned their positions in the area to the east of Kut-al-Amara,

or that they were concealing their troops so as to induce the British to take a false step.

The forward movement was continued on the 15th September, the Groups under Delamain marching to the neighbourhood of Ora, which was reached in good time after a brief skirmish with 200 of the enemy's horsemen. The remainder of Townshend's force sailed to a point a mile below the Abu Rumman Mounds (Map 2.), but the armed ships went even further up stream, and did not turn until within about 5 miles of the Turkish positions at Es Sinn, which were reported by the Arabs still to be occupied by the enemy. Next day Delamain moved to Abu Rumman, which was occupied at 7 A.M. after a trying march, for the ground was not only rough and uneven, but was covered in places by dense scrub growing to a height of 3 feet. No one was sorry that the march was finished. The men had sore feet, the animals sore backs, the hired transport had begun to lag and falter, and, according to an eye-witness it was really a wonder that these animals had accomplished the journey.

The troops, however, soon settled down in their camps, and then, with the help of coolies, the men proceeded with the necessary but exacting work of unloading from the vessels and barges the supplies that had been stowed in them; for the shipping was now to be sent back to Amara to bring up the residue of Townshend's force, the 63rd Field Battery, the 1/5th Hampshire Howitzer Battery, boats for the construction of a bridge, and supplies that, with those which were already at the front, would provide a reserve of 17 days for the force. Satisfactory arrangements were made, at the same time, for the purchase locally of sheep, fodder and milk.

Meanwhile, on the 16th September, a reconnaissance had been made by an airman, who flew from Shaikh Saad, and was supported by the Comet and Shaitan, which sailed up river to within range of the Turkish position. Unfortunately, owing to engine trouble, the airman was obliged to descend in front of the enemy's trenches, on the left bank. This was a serious loss, for only one other machine¹ of the Flight was at the moment capable of taking the air, although 3 seaplanes were on their way up from Ba-ra. The reconnaissance, however, was not fruitless, for a number of men left the trenches and crowded round the machine, until forced to scatter by the fire of the ships, which showed that the position was strongly garrisoned. Another reconnaissance

NOTE.—¹Three aeroplanes and 2 seaplanes were used during the battle.

by air was made on the 17th, for no one understood better than General Townshend the importance of obtaining information, and so gaining a large measure of security. And it was then seen that, as had previously been reported, the position extended over a frontage of from 10 to 12 miles. The left flank was near the Ataba marsh, on the right was a formidable redoubt, and much if not the whole of the entrenched line was protected by entanglements of wire. At the same time a small force of our cavalry, supported by infantry, advanced to within about a mile of the enemy's left, and ascertained that the surface of the ground in the interval between the Suwaikiya and Suwada marshes, which might have consisted of a thin crust of earth lying over bog, was sound and practicable for troops of all arms. In consequence of these reconnaissances General Townshend telegraphed to Sir John Nixon—the 6th Division was now in communication by airline with Amara—that in view of the strength of the position, and of the probability that reinforcements had reached the enemy, he proposed to call up to the front two battalions of the 30th Infantry Brigade that were guarding the line of communication between Ali-al-Gharbi and Abu Rumman.

The camp of the British force near Abu Rumman had been pitched on the right bank of the Tigris, which was now only 6 or 7 feet deep in the fairway, but was more than 300 yards in width and was flowing about 20 feet below the level of its steep banks. To the south, west, and east lay a flat expanse of scorched desert and on the northern bank of the river was the immense, dreary, Suwaikiya marsh. The practice of entrenching the circumference of the camp had not at first been followed, only a few earthworks having been made for the outposts, and for the detachment that had been placed on the left bank of the Tigris for the protection of the shipping. On the 18th September it seemed as if this might be disadvantageous, for a report was sent in by our outposts that the enemy's cavalry, who were still showing a good deal of enterprise, accompanied by infantry, were moving to the south and south-west of the camp. As a result the Indian Cavalry, whose morning patrols had returned without having gained touch with more than a few of the enemy's horsemen, were first sent out for the purpose of keeping in contact with the Turks, and subsequently a couple of 18 pounders fired a few rounds at them at a range of 5,000 yards. This caused the enemy to disappear, but, such were the tricks that were played by the mirage, it is not impossible that the sheep and camels of the local Arabs were

mistaken for soldiers. One result of this alarm was that the circumference was now lightly entrenched, in spite of the fact that the day was unusually hot as much as 121° being registered in the tents. On the next day, although the area near the camp had been reported by the Indian Cavalry to be clear of the enemy's troops, the alarm was raised by an outpost of our Infantry that a body of Turks was moving, at 8 A.M., to the south and south-west of the camp. This time the whole force stood to arms, the guns opened fire, and some units even marched out to meet the enemy. Eventually, however, it was ascertained definitely that a flock of sheep, distorted in the mirage, had caused the alarm to be raised. Meanwhile a squadron of the 7th Lancers had almost ridden into the enemy's lines, which were invisible in the featureless, dun-coloured plain. The leader of a Turkish patrol and his orderly were captured, but the squadron then came under close fire from a dry canal, which appeared to be full of infantry.

The information that was now available enabled General Townshend to issue to his men a definite plan for the attack on the enemy's position. (Map 2). The advance to the battlefield would, he said, take place on the 26th September, by which date it was hoped that the force would at last have finished its concentration. The Group system was abandoned, and the troops were divided into two columns. Of these A. Column, under General Delamain, was to march at 4-30 A.M. for a distance of five miles along the right bank of the Tigris to the Chahaila bend, some four miles from the Turkish position, occupy the mounds in this reach, and encamp near them. This column would consist of the 16th and 17th Infantry Brigades, which had been provided with 1st Line Transport of pack mules, the 2/7th Gurkhas and 76th Punjabis of the 30th Infantry Brigade, the two squadrons of the 7th Lancers, one and a half squadrons of the 16th Cavalry which had now come up from the valley of the Karun, the 10th Field Artillery Brigade (less the 63rd Field Battery), the 1/5th Hampshire Howitzer Battery (less one section which was at first allotted to B. Column), the Maxim Machine-gun Battery, the 22nd Company of Sappers and Miners, certain Signal units and sections of Field Ambulances, and 2nd Line Transport of hired camels, bullocks, cows and donkeys. The rest of the 1/5th Hampshire Howitzer Battery joined A. Column on the evening of the 27th September, and a couple of armoured cars each carrying a Maxim gun, and two lorries, were eventually added to the Column; but two batta-

lions of the 30th Brigade left it and became the general reserve of the force. B. Column, under General Fry, was to consist of the 18th Infantry Brigade, which had 1st Line Transport, a Signal Section, the 63rd Field Battery, the 48th Pioneers, the 17th Company of Sappers and Miners, and three sections of Field Ambulances; but no 2nd Line Transport. On the river there were four 5 inch guns of the 86th Battery, and two 4 inch guns of the 104th Battery all in barges and belonging to B. Column. There were also on the Tigris four 4.7 inch guns in horseboats, and the River Section of the Divisional Ammunition Column. B. Column were to be moved in the river steamers to Nakhailat, with the exception of the 63rd Field Battery and 48th Pioneers who were to march along the left bank of the river. The whole of the shipping, however, was to be under the protection, against attack from a northerly direction, of one troop of Cavalry, one section of Field Artillery, and the 104th Rifles, who were to be detached from A. Column and march along the left bank. The troops of B. Column were to disembark on the left bank of the Tigris at Nakhailat; they were then to advance, probably during the night of the 26th/27th September, over the open ground towards the enemy's position south of the Suwada and entrench themselves. This movement and the placing of the so-called heavy guns of the 86th and 104th Batteries on land behind the 18th Brigade might, in the early stages, need the support of the artillery of A. Column, which was to fire from the Chahaila Mounds, and of the 4.7 inch guns which were to be moored in the Nakhailat reach. Meanwhile the men of the improvised Bridging Train, which was now equipped with 18 pontoons and 42 native barges called Danaks, were to build a bridge near Nakhailat; and the units of A. Column were to make demonstrations against the enemy's positions on the right bank, so as to induce the Turks to believe that that an attack was to be delivered on both banks of the Tigris. A. Column were then to cross the river in the afternoon of the 26th, leaving their tents standing on the right bank. But the two battalions of the 30th Brigade, which would also constitute the general reserve, with six Nordenfeldt guns, were to take up a position on this bank so as to secure the camp, bridge and shipping against attacks from the south-west and south. After resting at Nakhailat until nightfall A. Column were to march to the space between the Suwada and Ataba marshes, their advance being covered by the 104th Rifles and the other troops that had already been detached to the left bank of the river for protection of the shipping; and the 104th were also to guard one

day's ration that was to be deposited on the 26th for the men of A. Column at a point between the Suwada and Ataba marshes.

At daybreak on the 27th September B. Column were to commence the "Preparatory Attack" by moving slowly against the portion of these Turkish position lying to the south of the Suwada marsh. The business of these troops was, "not only to pin the enemy to his position and hold him, but, by display and ruse and large extension of front (1,200 yards for example) to endeavour to make him believe that this is the Principal decisive attack and so induce the enemy to use up his Reserves to defend this section of the line." All localities that had been gained were to be consolidated and entrenched; and as soon as he learnt that the men of the principal decisive attack had taken the troops in the defile to the north of the Suwada marsh "by the collar, General Fry will change his preparatory attack into a decisive one."

The principal decisive attack was to be confided to A. Column under General Delamain, and the units of this Column were to go in half an hour after the preparatory attack had been launched. Delamain was to make the decisive attack in such a manner that, if possible, the troops were to take the Turks by surprise, and were then to envelop and carry the trenches lying to the north of the Suwada swamp and between it and the smaller Ataba marsh; the units being "echeloned" out on the exterior flank with the above intention, and the bulk of "the cavalry moving on his extreme exterior flank." Having won these entrenchments the men of A. Column were to advance rapidly southwards against the left flank and rear of the Turks that were to the south of the Suwada and gain the right bank of the Tigris. And Townshend added that: "it is thought that the enemy's right wing on the right bank will no longer stay when it is seen that their left wing on the left bank is retreating, which they must do precipitately when they see the turning movement descending on them."

Of the remaining units, the Airmen were to work under the orders of the headquarters of the 6th Division, being used for the work of reconnaissance, for observation of the fire of artillery, which had previously been practised at Amara, and for attacks with bombs; and the Bridging Train and the Searchlights would be under the Chief Engineer. The Ordnance and Supply units were to remain in the ships, the troops sending back to the river for what was required, as the transport that was available did not

permit of the employment of the usual method under which food and ammunition are pushed forward to the fighting formations by those behind them. Arrangements were made for the gunners of the 4·7 inch guns and the crews of the armed ships to co-operate with the 18th and 30th Brigades from positions in the river between Chahaila and Yadu.

Prince Metternich once pointed out that: "The materials necessary for a sound judgment of facts are not found in the success or failure of undertakings; exact knowledge of the situation that has provoked them forms no inconsiderable element of history." But anyone who ventures to comment on military plans and their execution is handicapped both because the facts are never exactly known, and because he cannot avoid representing the thoughts and feelings of the commander in terms of his own. On the other hand, it is possible sometimes to make a more just review of the situation from the writing table than could be done at the time; since the elements of hardship, danger and fatigue, and the strong emotions that result from them, as well as the sense of heavy responsibility, in which the fear of failure and harsh criticism is involved, and also the vivid personal impressions of the moment, must to some extent influence the working of the intellect and consequently the judgment.

The orders that he has received, as the objective will have been named in them, must exercise a paramount claim on the attention of a commander, whose first thought will naturally be to take measures for the attainment of this objective. Orders had been given to General Townshend that he was to effect the "destruction and dispersal" of the enemy's force, but orders, however emphatic, will be interpreted according to the character of the recipient. The spirit of these instructions seems in this instance to have been agreeable to the ardent temper of the commander of the 6th Division; and he therefore framed his plans in accordance with the sound maxim that a leader should have in view the advantages that are to be gained by success, and should put away all morbid dread of the consequences that may attend on failure.

It was now known by General Townshend that the British were faced by a strongly entrenched position, the front of which was well protected by wire, military pits, and perhaps also land mines. The position could only be approached over open, absolutely flat, treeless ground on which little cover could be found except where there was low scrub, or in the numerous dry

channels that had once been used for irrigation; and it was occupied by a larger force than had been supposed. The trenches on the left bank of the Tigris, which extended over a frontage of from 4 to 5 miles exclusive of the ground covered by the Suwada marsh, were probably held by six battalions of the 38th Turkish Division, numbering perhaps 5,000 men. Twenty gun-emplacements had been counted on this bank, but it was at one time thought that half of them were on alternative positions. It seemed also that the entrenchments in the northern part of the lines were less formidable than those to the south of the Suwada marsh; and owing apparently to the drying of the Ataba marsh these trenches no longer rested on an obstacle. On the right bank the Turkish position ran in part along or in front of two banks—known as the Es Sinn Banks—which at their northern end were 30 feet high, and the outer flank was protected by one large or two small redoubts (subsequently known to us as the Dujaila Redoubt) lying near Sinn Abtar and 3 or 4 miles from the Tigris. These entrenchments were, it was supposed, also held by six battalions, 3,000 strong, belonging to the 35th Turkish Division, or to that Division and to a Turkish Murattab Division. No emplacements for guns were visible on the right bank, but it was reported that there were nine guns in this section. There was a reserve of 4 battalions, composed of reservists, on the left bank, probably near the bridge of boats that had been moved down the river from Kut-al-Amara and placed above Guwam. It seems that the reason why the Turks selected a position near the Suwada marsh rather than one in the Sannaiyat defile, was that the defile is generally flooded during the season of high water in the rivers, between March and June, when the entrenchments were made; but the commanding Es Sinn banks, and the fact that there was a small hill at Dujaila, may also have had some influence in the choice of the battlefield.

It was believed that the number and calibre of the enemy's guns was as follows:—

Two heavy guns each of 4·8 inches, three howitzers each of 4·7 inches, one 18-pounder quick-firing field gun, which had been captured from the British in Arabistan and possessed only a small quantity of ammunition, twelve 15-pounder Krupp field guns of old pattern, and seven muzzle-loading guns. There was, however, an unconfirmed report of the arrival from the north of six additional guns of quick-firing

NOTE.—¹ See Appendix.

pattern. The tug "Pioneer," which had been armed with one or more guns, was now the sole floating defence possessed by the enemy. The Turks had about 30 machine-guns, and the force was well provided with horsemen, for there were about 600 regular Turkish cavalry and a number of camelmen, and from 1,000 to 3,000 mounted Arab tribesmen. The total fighting strength, excluding the tribesmen, might amount to 10,000 men, of whom 2,000 formed the reserve, with 24 guns of modern or comparatively modern pattern but of the regulars not more than one quarter were Turks, the others being Arabs, Kurds or Jews. As has been stated, it was understood, moreover, that the *moral* of the troops was not good, and desertion was frequent especially among the Jewish soldiers. In addition, the extent of the entrenchments was such that only one man would be available for the defence of each yard of frontage. It did not seem as if any considerable reinforcements had recently reached Baghdad either from the north or from the detachment that had been reported to be at Khanikin on the Persian border. But it was thought that the small force at Ctesiphon belonged probably to the 37th Division.

The number of combatants under the orders of General Townshend was between 10,500 and 11,000, and of these 8,000 were Indians and 3,000 British; the strength of the British battalions varying from 640 in the case of the Dorsets, 16th Brigade, and 600 in that of the Norfolks, 18th Brigade, to 756 for the Oxfordshire and Buckinghamshire Light Infantry, 17th Brigade. Even without the small guns of the armed vessels, the British possessed the more numerous and powerful artillery, four 4·7 inch guns in horseboats, four 5 inch guns, two 4 inch guns, eighteen 18-pounder field guns, and four 5 inch howitzers. There were, in addition, half a dozen Nordenfeldt guns, one 15-pounder gun and 40 machine guns; and even the five aeroplanes constituted a further source of superiority, for the Turks were without aircraft. Nevertheless, in view of the strength of the enemy's entrenchments, and the flat waterless nature of the ground, the material advantages were by no means on the side of the British; and the issue of the battle would therefore depend on the factors of leadership, training, discipline and quality.

It was supposed by the British that the Turks had already given away one point in the intellectual contest, and yielding to the temptation to be strong in all places, which inevitably

exercises so powerful an influence on the defenders, had divided their forces, placing six battalions on each bank of a great river, and holding only four battalions in reserve. So far as was known, moreover, troops could only be moved from one bank to the other by a bridge of boats, which was 4 or 5 miles behind the position, or by a ferry that was near the bridge. Four or five hours, at least, must therefore elapse before units sent from the positions on one bank could make their presence felt on the other side of the river.

It has already been pointed out that the mutual support that can now be given by forces standing on each bank of even a large river apparently obliges the attacker to engage each group closely, unless he can gain the outer flank of one of them. So far as tactics were in question—and General Townshend had to solve tactical problems of far wider scope than those that faced commanders of his rank in the main theatres of war—his first care, therefore, had been to ascertain whether the outer flank of either of the two groups into which the enemy's force was divided was accessible; and it seems to have been established that each outer flank could be reached, and consequently that the deadly form of attack from two directions could be made.

As regards the enemy's left, the distance from Nakhailat to the Ataba marsh was between 6 and 7 miles; it had been reported that the area beyond the Turkish left was level and practicable for cavalry, artillery and infantry; and it was evident that the Suwaikiya marsh would to some extent protect the outer flank and rear of a force sent to envelope this wing of the enemy's line; and that, in the corridor between the marshes, troops when moving by night could not go far out of the direction in which they were to march. Also, owing to the situation of the Suwada, it would be easy both to protect the shipping from attack along the northern bank of the river, and at the same time cover the flank march that must be made by a force sent to outflank the enemy's left. And a report had been made that the water in the Suwada was drinkable though brackish. On the other hand, the Turkish force on the left bank of the Tigris was more numerous than on the right bank, but the troops were separated by the Suwada marsh, and could therefore be beaten in detail. The ground on the right bank was also not so favourable as that on the left for defensive measures against raids on our shipping; and the area behind the enemy's left was apparently more free from obstacles, which would hinder the movements of troops who were retreating, than that behind the right.

As to the Turkish right, the distance between Chahaila and the Dujaila redoubt, a work that apparently was stronger than those on the left, was between 7 and 8 miles; but, unless a dangerous flank march were made across the enemy's front, 10 or 12 miles must be covered in order to reach the redoubt. The ground both in front of and behind the enemy's position on the right bank was also, as it seemed, so much broken by dry watercourses and canals¹ that progress would probably be slow both in the advance and during the attack and pursuit. Although there was a swampy area, the Umm-al-Brahm, to the south, it was neither so extensive as the Suwaikiya, nor would it afford such protection to troops that were making an enveloping attack and they would therefore be exposed both by night and day to the harassing tactics of the Arabs. If a concentration of force were made on the right bank it would, however, owing to the proximity of the Suwaikiya and Suwada marshes to the Tigris, be easy to protect the shipping from attack from the left bank. The Shatt-al-Hai, in which there was water, flowed at a distance of 8 or 9 miles behind and to the west of the enemy's line on the right bank of the Tigris; so that, if defeated, the Turkish troops forming the right wing of their army might be cooped up in the angle between the Tigris and Hai, and, if the latter were unfordable, obliged to surrender. The strength of this force was also lower than that of the left wing, but the troops were not in two groups. The nearest drinking-water that would be available for the British if the attempt were made to envelop the enemy's right flank would, so far as Townshend was aware, have to be obtained either from the Tigris or Hai.

After weighing these, and other factors that told in favour of and against a concentration of force on one or other bank of the Tigris—for he rejected the alternative of a simultaneous advance against both of the enemy's wings—General Townshend had decided to adhere to his original conception and to envelop the Turkish left. In order to make assurance of victory doubly sure, he resolved, further, to economise in the troops that would be used for the purpose of obtaining security, protection and freedom to manœuvre. Almost the whole of the British force would, therefore, be brought against half of that of the enemy, and, in addition, two-thirds of these British troops would be sent against their outer flank. Since surprise is so important an item in the measures that must be taken for the attainment of victory, for if

¹ Note—¹ Actually these watercourses and canals were shallow

the enemy ascertain what is to be done steps can be taken either to spoil or prevent it, arrangements would also be made to mislead the Turks as to his intentions¹.

That this was a bold decision is evident, for a commander risks much when he detaches more than half of his army to move round and envelop a flank of the enemy's position. But the Turks fight better against a direct attack than when they have been outmanœuvred, and the Turkish commander had, up to this time, shown such lack of enterprise, and, as the British believed, so little skill also in disposing his troops, whose moral was thought to be low, that liberties could rightly be taken with him. And Townshend consequently had every reason to hope that he would gain a decisive victory, which would more than justify any hazard that had been incurred in the course of its attainment. His measures, moreover were such that, should Delamain's attack fail, or be overthrown by a counter-attack on its outer flank, which would be the enemy's most obvious method of retaliating, it was unlikely that security would be lost, and that the British troops would suffer disaster and be separated from the remainder of the force; for the Turks would find it difficult to burst through the lines that were to be held by the men under Fry, who would be in the defile between the Suwada marsh and the Tigris. Delamain, therefore, if defeated, would probably be able to regain touch with Fry, after which the British could fall back to and hold the narrow gap at Sannaiyat and the area between the Tigris and the Brahm. Were a counter-attack to be delivered by the Turks on the right bank of the river the task of the British troops on the left bank would be easier; and the fate of the battle would depend on whether the Turkish right could so seriously threaten Townshend's communications and his shipping as to oblige him to break off the movement against their left. But, if the Turks made this attack, it was probable that the two battalions of the 30th Brigade, backed by the guns in the Naval flotilla and horse-boats, would hold off the enemy, and gain for the rest of the British both security, freedom to manœuvre, and the time required for the attainment of success.

General Townshend had certainly taken ample measures to mystify and mislead his opponent, and to "economise strength while compelling the dissipation of that of the enemy." In the first instance he had advanced up the right bank of the Tigris as if intending to attack the Turkish right. This very marked manœuvre might, however, have aroused suspicions that some-

Note—¹ See Principles of War, Field Service Regulations, Volume II, Section 2.

thing else was in prospect, and it does not seem that Nur-ud-Din, who was under the heavy disability that is inherent in the system of inactive defence, namely that his measures must be subordinated to those of the enemy, altered his dispositions on account of this movement. It was felt, perhaps, that until the attack was actually in progress a forecast could not be made as to the point where the principal blow would be delivered. Subsequently a British detachment was placed on the left bank, which might tend further to confuse the Turks; and the plan that was finally adopted was framed with the object of holding fast the enemy's right wing and left centre, while their left was crumpled up by a force of about eight battalions, protection and liberty of manœuvre for which would at the same time be assured. General Townshend was an assiduous student of the campaigns of the Emperor Napoleon, and a follower and adapter of his system of applying the principles of war. It seems, then, that in this instance he modelled his battle on what the Duke of Wellington said was the method that was followed by Napoleon: "That of bullying with much noise and smoke, puzzling his cautious adversaries as to the point of attack, and massing under cover of light troops and guns his own people on one or more points." Or, as the Field Service Regulations more sedately lay down: "The greatest possible strength should be deployed for the decisive attack. While preparations for this attack are being made and during the attack the enemy should be held to his ground in other parts of the front, and efforts should be made to force him to dissipate his reserves."

A plan of action however well drawn may fall in the execution through no fault of the commander, and the soundness of the plan, therefore, should be estimated by the test whether it would, in the circumstances in which it was to be carried out, be likely to effect its purpose, and, as has been pointed out, not on its prosperity or failure. The success of General Townshend's project depended largely on his power of holding fast the enemy's troops on the right bank of the Tigris while he beat those standing on the opposite bank. It is questionable whether the effect of the demonstration made in the afternoon of one day could be expected to continue on the next, even during the short time in which it was hoped to roll up the Turkish left, and even if it is admitted that, owing to the mirage and the presence of a couple of battalions, which were to occupy positions on the right bank, the Turks might not quickly divine what was in progress. General Townshend was also probably too

sanguine in believing that the enemy's right wing would at once retire without attempting to succour the left. The Turks had undoubtedly shown but little resolution and tenacity in his last battle with them at Kurna, but it was not reasonable to conclude that they would always act with the same pusillanimity, especially in view of the facts that, they had fought well at Nasiriya, two months had passed since this defeat, and they were now under a new commander Nur-ud-Din Pasha. Unless Delamain succeeded in literally overrunning the enemy's left wing, it was to be expected, therefore, that some assistance would be given by the troops on the right bank to those on the left; either by attacking the British left; or, what was perhaps more probable, for the tendency is to hasten to the place where the attack is being made, by the despatch of reinforcements over the bridge and in the ferry.

Although General Townshend had chosen to take the troops into his confidence, and therefore, so far as could be done in this way, made sure of their co-operation even at the risk that the enemy would become acquainted with his plan, it is also a matter of experience that some failure generally attend manœuvres that are so extensively combined. It was hardly to be expected, then, that all the different actions involved in the British plan would be carried out according to General Townshend's desires, even supposing that the Turks continued to maintain their comparatively passive attitude. Little or no margin in fact, was allowed for error. Another objection to the plan is that unusually severe calls were to be made on the endurance of the troops who were to deliver the principal decisive attack. For, after the enervation due to a summer in a most unhealthy climate, they were, besides fighting a battle, to be under arms for the greater part of the day and night before it; and were to move at least 15 miles, part of the time in such intense heat that a temperature of 95° in the shade was characterised as "very refreshing," partly also by night when the temperature now fell so rapidly that the quick transition was trying. In addition, the influence that might be exercised by the weather was not sufficiently discounted; for this was a climate where confusing mirage was a daily phenomenon, and blinding dust-storms were frequent.

The judgment of the man on the spot must certainly always carry greater weight than subsequent opinion, which cannot be based on an altogether accurate estimate of the local conditions,

and General Townshend's plan was both original and very daring. It is suggested, however, that his object would more effectively have been attained, and economy as well as surprise, security, and freedom of manœuvre, more adequately assured, had a larger force, a larger general reserve, perhaps three battalions with a few guns and some cavalry, been placed on the right bank; their function being that of holding fast the enemy's right by continual demonstrations, or, if necessary, by making an attack. Measures for the destruction of the bridge and ferry, which were 18 or 20 miles from Nakhailat, should also have been included in the plan of battle. Something must always be hazarded in every plan, and under these arrangements greater risk would be run than under General Townshend's plan that the British left would be defeated in its attempt to keep a close hold on the enemy's right. The general reserve might, in addition, be used up earlier in the day. On the other hand the prospect of containing this portion of the enemy's army would be more favourable; and, if the Turks did advance in strength along the right bank for the purpose of driving off the British left, the three battalions would, with the assistance of the heavy guns and the armed vessels, certainly be able to defend themselves until the defeat of the Turkish left had been fully accomplished.

It may also be remarked that it is doubtful whether it is advantageous to call different operations by emphatic names, such as Principal Decisive Attack. It is true that, under this system, even the dullest cannot fail to grasp what is required of them. On the other hand men who know that they are only expected to "prepare" may, indeed they have more than once done so, hold off to such an extent that the enemy will not be misled by their operations. Further, as so often occurs in war, an unexpected movement by the enemy may oblige the troops of a principal decisive attack to stand on the defensive; and then the formations engaged in a preparatory attack, whose thoughts may not have been moving at all in other directions, may suddenly be required to take different action for which they are wholly unprepared.

APPENDIX

(Will be republished with Part II of this article).

ORDER OF BATTLE.

TURKISH FORCE.

35th and 36th Divisions, and some additional units, under Nur-ud-Din Pasha. It is said by the Turks to have consisted

of: About 6,000 infantry (one quarter of whom were Turks, rest being Kurds and Arabs, with some Jews under Turl officers), 600 cavalry and camelmen, and three heavy guns, 1 howitzers, eight quick-firing field guns, two mountain guns, sixte 15-pounder guns, and seven muzzle-loaders; and also 40 machin guns. A tug, the "Pioneer" belonging to a British firm, had bee seized on the outbreak of war, and had been crudely armoured and armed with one or more guns. From 1,000 to 3,000 mounted Arabs assisted the Turks; and the whole battle-area was infested with armed Arab marauders, who were generally on foot.

BRITISH FORCE.

Naval Detachment.—The Comet, a yacht, armed with one 3-pounder gun and three Nordenfeldt guns. The tugs Shaitan and Sumana, which had been armoured against rifle fire, each armed with one 12-pounder gun, one or two 3-pounder guns, and one Maxim machine-gun. Half a dozen launches; and 2 seaplanes.

Military Force.—The 6th Indian Division, with other troops. The combatant strength was from 10,500, to 11,000 and of these 3,000 were British and 8,000 Indians. The men of the artillery were British.

The fighting units comprised:

Infantry.—The 16th Infantry Brigade.

2nd Battalion, the Dorsetshire Regiment.

The 20th Punjabis, (now the 2/14th Punjab Regiment).

The 104th Rifles, (1/6th Rajputana Rifles).

The 117th Mahrattas, (5/5th Mahratta Light Infantry).

The 17th Infantry Brigade.

1st Battalion, the Oxfordshire and Buckinghamshire Light Infantry.

The 22nd Punjabis, (3/14th Punjab Regiment).

The 103rd Mahratta Light Infantry, (1/5th Mahratta Light Infantry).

The 119th Infantry, (2/9th Jat Regiment).

The 18th Infantry Brigade.

2nd Battalion, the Norfolk Regiment.

The 7th Rajputs, (3/7th Rajput Regiment).

The 110th Mahrattas, (3/5th Mahratta Light Infantry).

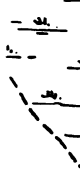
The 120th Infantry, (2/6th Rajputana Rifles).



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The 30th Infantry Brigade.

The 76th Punjabis (3/1st Punjab Regiment).

The 2/7th Gurkha Rifle.

The 48th Pioneers (4/2nd Bombay Pioneers).

The infantry possessed 38 machine-guns.

Cavalry.—The 7th Lancers (18th King Edward's Own Cavalry) two squadrons with 2 machine-guns.

The 16th Cavalry, (6th Duke of Connaught's Own Lancers) one and a half squadrons.

Artillery — The 10th Field Artillery Brigade.

The 63rd, 76th and 82nd Batteries, and Ammunition Column (eighteen 18-pounders).

The 1/5th Hampshire Howitzer Battery (four 5-inch howitzers).

The 86th Heavy Battery (four 5-inch guns).

One section of the 104th Heavy Battery (two 4-inch guns).

Four 4·7 inch-guns in horseboats.

One 15-pounder gun, and 6 Nordenfeldt guns, used for the protection of post and camp.

Other Troops.—One 6 gun Pack Machine-gun Battery (Maxims).

Two armoured cars, each armed with one Maxim machine-gun.

The 17th and 22nd Companies of Sappers and Miners.

The Bridging Train.

The Searchlights.

The Divisional Signal Company.

The Divisional Ammunition Column, part on land, part in barges.

The Engineer Field Part.

The Divisional Supply Column.

One Flight of 4 Aeroplanes.

River Transports —The Medjidieh, Blossie Lynch, Julnar, Mosul, P. 4 as Ambulance ship and one Ambulance launch. One barge or lighter was generally lashed to each side of a steamer, and one steamer, with its barges, could carry 500 to 800 infantry, or a battery, or about three troops of cavalry.

LECTURES ON THE MANCHURIAN BATTLEFIELDS II.

(Delivered by Lieut.-Colonel G. de S. Barrow (now General Sir G. de S. Barrow, K.C.B., K.C.M.G., A.D.C.), at the Staff College, Quetta, in March 1914.

(These lectures have not been revised in any way, except to bring references to F. S. R. up to date with the 1924 Edition).

TASHICHAO.

At Tashichao, the Russians enjoyed an excellent field of fire, and far superior to that at Port Arthur and Telissu.

There is little of the dead ground consequent on the steepness of slope which is found at those places. There are good and indistinguishable gun positions and on these the Russians had been working since July 11th, and it was well entrenched. Its object was to gain time and maintain open, for as long as possible, communication with Yingkow.

With reference to the actual occupation of the position, the object of the advanced post held by a battalion of the 8th Siberian Infantry Regiment is not clear. Reasons for it were examined on the ground but no satisfactory one was forthcoming.

The Russians retired although they had repulsed the Japanese all along the line, and had still six battalions and a battery in reserve.

Sarubaiev thought that he could not face another attack, and the less because his troops were very tired. The Japanese were perhaps equally tired or more so. But no doubt he was influenced by Kuropatkin's previous instructions merely to delay the enemy.

The delaying action of a detachment is a frequent operation of war. Apart from the special danger of defeat, however, which it incurs in an enhanced degree, it possesses certain grave liabilities.

If you engage the enemy, and retire before a decision has been arrived at, and when, as in this case, the results have so far been in your favour, you may be acting in accordance with your instructions, and you may know quite well that you are not defeated ; but are you sure that your troops will see it in exactly the same light ? And every retirement before the enemy, unless

you have first won the confidence of your troops by previous successes tends to undermine their trust in your leadership ; and even when this does not occur, and your own troops do not become discouraged, the enemy at any rate becomes encouraged ; and if it is seldom, if ever, advisable to fight without the intention of winning, *pari passu*, it must be rare indeed when the order to another to do so is justifiable, a good case for delaying action excepted. Without going into details, we may assume, on Kuropatkin's own showing that he had not this "good case." In his book on the Russian Army and the Japanese War (Volume II, page 225), he says that, notwithstanding the loss of Yingkow, the retreat from Tashichao improved the strategical situation of the Russian Army, in that the extended front was reduced by twenty miles.

In war it is not true that "he who fights, and runs away, lives to fight another day." He is either killed when in the act of running, or if his body is not killed his spirit is, and when he fights on that other day he is only too ready to repeat his former manœuvre, and so on in geometrical progression till his fighting power is reduced to zero. And it also incurred the disadvantage possessed by so many positions destined for passive defence, it was difficult to know where to terminate the left flank, and so, in this instance, the left was extended to Kusantsy, a distance of eight miles as the crow flies, an extension too great for the available number of troops.

A noticeable fact about the conduct of the battle on the Japanese side is that there was no attempt made to envelope or outflank, nor was there any effort to penetrate the front by the employment of a reserve (see Field Service Regulations 69—3 & 5), and yet it is only by means of one of these two methods that there can be any hope of decisive success. The results of the battle prove the truth of this assertion, and the Japanese failed to drive the Russians from any part of their position, (excepting from an advanced post,) although this was one of the few occasions on which they were in numerical superiority to their opponents (60,000 to 42,000).

The main force of the Japanese attack fell on the Russian centre. The Russian Official Account considers that the Japanese must have obtained detailed information of the position in that their principal attack was directed against the most vulnerable point, in preference to any attempts against the flanks. A careful examination of the ground and details of the battle, forces

one to the conclusion, in the light of after knowledge, that Oku would have had a good chance of obtaining more decisive results had he attacked along the front with two Divisions, say the 6th and 5th and kept the 3rd Division in reserve. He would then have had an opportunity of eventually putting this Division into the fight along the saddle between the lines of advance actually taken by the 5th and 3rd Division, and this without any dislocation of the 4th Division.

Again the Japanese attacked with a small general reserve, and throughout this war we invariably find the same thing, the Japanese retaining a comparatively small proportion as general reserve, whilst the Russian general reserves, at the commencement of a battle, are sometimes very large and always a considerable strength.

One of the objects of a reserve is to enable the commander-in-chief to retain his hold and exert his influence on the battle up to the last moment, eventually employing it for the delivery of the decisive blow.

As battles increase in size, however, so does the power of manœuvre of the commander of the whole force on the battlefield become less, and more and more passes into the hands of his subordinate commanders. In fact, a battle such as Liao-yang, the Sha-ho and Mukden, is not really one battle, but several battles fought out by several armies simultaneously. The commander-in-chief initiates and tries to place subordinate army commanders in the best position for winning a series of battles, each contributing to the whole scheme. Under such conditions there will seldom be a place for a great general reserve.

In these great battles we find the Russian reserves are either not used at all, owing to time and space difficulties or used in dribblets, and the first tactical principles thereby violated.

This is not a new experience, *viz.*, that strong reserves are no proof of wise but false economy. It was the experience of 1866 and 1870, at Koniggratz, where Benedek retained a reserve of the second Army Corps and 5th Cavalry Division, and at Gravelotte, where the French reserve and their splendid reserve artillery hardly fired a shot.

The non-employment of a general reserve does not mean that all the forces must be simultaneously engaged. At the commencement of the battle of Mukden we find the Japanese attacking on their right long before making any advance on

their left. A portion of the force may be held back to effect a tactical surprise, but this should not be labelled "Reserve." An army of 30,000 should have a reserve, an army of 300,000 should not have a reserve because that reserve, would always arrive too late. It is not mere a question of the size of the reserve being proportionate to the numbers engaged and to the extent of the field of action. The physical strength of each individual comprising the reserve remains the same. In fact, the larger the reserve, the slower it moves, and the greater is the effort required for it to move a certain distance. And Kuropatkin's counter-stroke against Kuroki at Liao-yang shows that it is essential to the success of the normal employment of a reserve that the troops should be fresh and in good conditions for fighting. A Russian Officer, writing of the march of the 1st and 3rd Siberian Army Corps to take part in the great counter-stroke against Kuroki at Liao-yang says, "Our soldiers were falling with fatigue and exhaustion, their nerves failed to perform their duties, we were compelled to take into account this psychological factor."

You cannot expect to win battles with soldiers falling from fatigue. It is at least as much a part of generalship to appreciate the physiological and psychological factors in modern fighting as to make the most suitable dispositions and manœuvres. A counter-stroke is easy to make on paper. In a battle extending over a front of 30 or 40 miles or more, it is no longer only a question of the direction in which it shall be made, it is a question of how to get the troops to the right place in time, and to deploy them while still preserving sufficient strength, physical strength, for them to be able to fight.

According to the rules of tactics the Japanese should have been defeated at Liao-yang and there is no use in pretending otherwise.

In a battle extending over three miles a general reserve can be employed, in a battle extending over 30 miles it cannot be employed. It only comes in time to fight to-morrow's battle, which is too late to win to-day's, which is the only thing which matters.

If, then, one of the chief objects of a reserve is to enable the commander-in-chief to exert his influence on the battle, can he, in the event of his retaining no large reserve in his hands, have any influence on the course of the fight once the flag has fallen?

Yes, he can, for he can say as Oyama said, and as Oku, Nogi and Kuroki said, "The troops will attack once more." His firmness and determination to go through with his plan to the bitter

end influence the battle to-day as ever before. If he wavers his subordinates will waver, as the Russian commanders at Tashichao, and at almost every battle and combat throughout the war, wavered; and if he is firm, his subordinates will be firm, even as the Japanese commanders one and all were firm, when necessary even to death.

Although, for the reasons given, a general reserve for a great force fighting over an extended distance is not advisable, this does not mean that smaller formations, army corps, and even armies, whether acting independently or as component parts of the larger formation, should dispense with a general reserve. The same arguments, *viz.* those of space and time, do not here apply. Were the Japanese then justified in the smaller battles of limited frontage, Nanshan, Tashichao and Telissu, for instance, in retaining so small a reserve? In war, it may be said that success justifies everything. So it does for the victor, and herein lies the very danger when deducting lessons for future guidance.

We consider that in face of an able and active commander, and mobile troops, the Japanese were running grave risks, risks which were hardly justifiable unless they had gauged the character of their opponents with an accuracy very exceptional at so early a stage of the war.

The interpretation appears to us to lie in the same reason as that given for the Japanese tactics at Nanshan, that is, in a tenacious adherence to a doctrine.

But a doctrine can be carried too far, and when it outstrips Moltke's great maxim, "the best adaptation of the means at hand to the attainment of the object in view" it passes into domain of pedantry.

And yet, perhaps, it is hardly fair to say that the Japanese did not have a reserve at Tashichao when we look at the order to the 4th Division, although this was not labelled "Reserve" in the orders. The order to the 4th Division was, "The 4th Division will take up a position near Wulaishan and will hold it in strength as a protection for the left flank of the army. No advance will be made therefrom until it is observed that the general attack elsewhere is succeeding." The last sentence shows that the 4th Division was not intended to be a general reserve in the ordinary sense of the word.

Why should Oku keep back the 4th Division? This question is best answered by another. Which would have been the best

way for Zurabaiev to deal with the problem, had he really been fighting to win? He might have held the actual position with the IV Siberian Army Corps and the artillery of the I Siberian Army Corps and used the latter for a counter-stroke keeping it concealed behind the heights west of Tashichao, or even further west covered by the cavalry of Kossagoviski, between Tapinshan and the railway.

The action of the Russian cavalry was contemptible. Kossagovski said the country over which he had to work was too marshy, perhaps after heavy rain it may have been so, we know from experience that the ground in the plains does become practically impassable for mounted troops after heavy rain although it dries up again wonderfully quickly. But what about Mischenko? He in the mountains had not, neither did he make, any such excuse. So little idea had he of the role of cavalry in battle that he writes quite complacently in the evening. "The day has passed without incident for my detachment, the enemy has not advanced in front of me, I have suffered no losses." Comment on this is superfluous.

THE MOTIEN-LING.

The ascent to the Motien-ling is much more gradual than I had anticipated. It is a poor track, however, along which to establish the line of communication of an army. In this Eastern theatre of the war one is continually impressed by the difficulties of supply and of deployment for battle. At the same time one receives a good corrective to the ideas one is apt to form in Europe, and one may say also in India, regarding the possibility of maintaining large forces in the field in a country devoid of railways and proper roads, and where the movement of vehicles is confined to mere tracks along the valleys. Frequently, even this track does not exist, or is so bad that it is actually easier to move across the fields. The successful supply of the 1st Army from the time of its first landing up to its arrival before Liao-yang is an exemplification of how, in war, given determined leaders, a good staff and willing troops, obstacles exist only to be overcome.

One of the most noticeable features about the fighting at the Motien-ling and adjacent passes is the way in which the divisions were separated by mountain ranges, and yet, in spite of defective methods of communication, were able to act to a certain extent in combination. They were bound by necessity to act on separate lines, as not more than one division could find space to operate along one line.

The country in this region is more mountainous than in other portions of the theatre of war, but it is neither so forbidding nor so difficult to negotiate as that of our Indian frontier. The mountains in summer are beautifully wooded and green, and iris, lilies of the valley, and other flowers, grow in wild profusion.

THE YUSCHU-LING AND PEN-LING.

From the top of the hill overlooking Osaki's action against the retiring Russians one could observe the whole field of action of the 12th Division and the valleys of the Tan-ho and Si-ho as far as the Faitsu-ho.

Looking across the mountains from a lower point one sees nothing but a mass of peaks and ranges innumerable, for all the world like the waves of a choppy sea. From higher up, however, one discovers that the valleys are very clearly marked and the difficulty of operating in this country is less than appears at first sight, though not by any means to be depreciated. At the same time the facilities for inter-communication, combination and mutual support, are greater than in the mountain warfare to which we are accustomed. As with us, the retirement of one portion of a force quickly entails the retirement of another portion, under penalty of being cut off. This, no doubt, is the reason that the Russians retired so soon from the Yuschu-ling, and as events showed it was fortunate, owing to the action of Osaki's brigade, that they did so.

One notices constantly in these mountains Japanese trenches, and of a very strong type, even on the highest points captured by them, and these trenches remain to this day monuments of the Japanese industry and determination to leave nothing to chance. (F. S. R. II, S. 79, 9 & 10).

CHIOUTOU.

Description of ground and events in the British Official Account gives a wrong impression, and is very confusing, when compared with the ground and the Japanese map. The hill, up which both sides are supposed to have raced for its possession, is precipitous. One may, of course, race at a walk or at a crawl, but the impression conveyed by a general use of the term is something quite different. Our Official Account leads one to think that the commanding hill, by which the position could be easily and completely turned, a veritable key to the position, was neglected by the Russians. To any one standing on the

battlefield it seems incredible that this should have been so ; and on enquiries from the Japanese officers and from an inspection of their official maps, we found that a whole battalion had occupied this hill and denied it to the Japanese until the retirement from the main position took place. There are other discrepancies, and the action of the 14th Regiment, as given in our Official Account, is misleading. Gershelman was ordered to hold this position in order to cover an important road and valley junction. The position was, however, in itself, a thoroughly bad one, and impossible to hold for any appreciable length of time. Should he, therefore, have attempted to carry out his orders literally ? Personally, after seeing the ground, I am convinced that this was a case when he should have followed his tactical instinct and judgment rather than his orders. We should have preferred to treat it as a rear-guard position, leaving a small force, say 2 battalions and 1 battery, and with the main body taken up a covering position in the hills to the north-west and in the village north of the position, retiring the rearmost force as soon as the enemy had deployed.

ANSHANCHAN.

This is a strong or a weak position according to whether it is occupied for active or passive defence. Its weakness, if occupied passively, lies in the right flank which is completely "*en l'air*," and can be easily turned from the south-west, numerous villages affording cover to an attacking force. Its strength lies in a very fair field of fire and frequent glacis-like slopes. The position was well entrenched, and the sites of the numerous redoubts are still in good preservation. The communications to the rear are sometimes very exposed, and opposite the left, and left centre, there are several good artillery positions for the attacker.

From hill 1111', a view over the whole position and the ground over which the attackers would have to pass is obtainable, and from here the exact moment when to launch a previously organized counter-stroke could be accurately gauged. A Russian "dug out," evidently for the accommodation of an observation party, was noticed on the summit of this hill.

Kuropatkin, having decided to fight a defensive battle in the vicinity of Liao-yang, had three positions to choose from :—

1. Anshanchan-Upper Tangho-Taitsu, a very extended position.

2. Shoushanpu-Zofantun Siapu.

3. Sykwantun-Lotatai-Kaolizian.

Oyama expected him to hold the first, influenced doubtless by the fact that Anshanchan had been strongly prepared for defence.

He chose the second.

He probably would have done best by occupying the third. Although himself in favour of retiring to Mukden, political considerations, outside influences, and the necessity of restoring the moral of his troops forced him to fight at Liao-yang. But that town was in itself of no tactical importance whatsoever. Beyond containing a large amount of military stores which could easily have been moved betimes to the north side of the river, it had no interest, sentimental or material, for the Russians. It was not a great administrative railway (or commercial) centre, it did not even possess any historical association for the Russians; in fact it was no more to them than any one of the numerous villages which surrounded it.

There are no doubt many arguments in favour of not retiring from the Anshanchan position. Some people hold that this was Kuropatkin's opportunity, acting on interior lines to operate decisively against one or other portion of the Japanese forces, now separated by 25 miles of difficult country. The position, if maintained, would have been either:—

(a) Defensive, with an ultimate view of a counter-stroke.

(b) Offensive, *i.e.* with the eventual idea of acting on interior lines.

(a)—When holding it defensively it would be necessary to consider it in connection with the whole Russian front, *i.e.* the Eastern as well as the Southern front, and Kuropatkin "had from the beginning recognised the hopelessness of holding the widely extended and forward positions on the Tan-ho in the face of a serious attack by the enemy, and was resolved to evacuate them the moment such an attack became apparent." (German Official Account II, p. 193.)

(b)—For action on interior lines the Russian Army did not possess the factors necessary for success. "Each one of the Russian Army Corps with the exception of a portion of the 17th Army Corps had been beaten or roughly handled, the Army as a whole had never yet fought under its Commander-in-Chief, neither would its training, organisation, nor general efficiency

appear to have been equal to a task of such magnitude, which demanded ability of a high order and great fighting capacity." (Ross—pages 295-296.) Only a highly efficient and mobile army, confident in itself and in its commander, the latter being a leader of exceptional and approved ability in the handling of a large masses, and seconded by a very able staff; would be able to carry out such a manœuvre.

I have said that the town of Liao-yang was in itself of no tactical importance, but, the positions occupied by the Russians invested it with an importance which was, however, an entirely unfavourable one for them. Its occupation in this case by the enemy would necessitate the abandonment of any defensive line they might be holding within the river bend. This fact would have its effect whether the battle was fought out on purely defensive lines or with an offensive intention, *i.e.* with the intention of delivering a great counter-stroke. A counter-stroke on the eastern flank, in the mountainous country south of the river would be too long drawn out, too uncertain, and there is no possibility, where artillery and large columns are confined to the valleys, of ensuring that the blow shall fall on that part of the enemy's line at which it is meant to be delivered.

On the other hand, a counter-stroke, delivered against the left flank of the Japanese, would promise much more decisive results, but failure in this direction would mean disaster for the whole Russian Army.

Kuropatkin having decided to fight a defensive battle, in spite of having obtained the numerical superiority for which he had hitherto been waiting, I am of opinion, after having seen the ground, that he would have been better advised to take up a position north of the Taitsu-ho.

He had available the Ist, IIInd, IIIrd, IVth and Vth Siberian Army Corps, the Xth and XVIIth Army Corps and two regiments of the Ist Army Corps and the Cavalry of Samsonov, Mischenko and Liubavin and that with the detachment of Grekov; and it is suggested that this force might have been distributed somewhat as follows:—

| | | |
|---------------------------|-----|--------------------------|
| XVIIth Army Corps | ... | Matapu to Hill 131. |
| Kossagovski's detachment | ... | Tayopu. |
| IIInd Siberian Army Corps | ... | Tschantsutun to railway. |
| IVth " " " | .. | Railway to Tantsyfan. |

All these Army Corps to keep strong local reserves as they would well have been able to do with the comparatively short fronts allotted to them. Samsonov and Grekov's cavalry at Hokunpo and west of the Sha-ho.

The remainder of the force, *viz.* the Xth Corps, Ist, IIIrd and Vth Siberian Army Corps, part of Ist Corps, and remainder of cavalry (Mischenko, Liubavin, etc.), in rear as a striking force, Ist Corps at Yentai, and remainder west of railway.

SHOUSHANPU SINLINTUN.

This section of the defensive line was a terrible one to attack. Not a scrap of cover except what was obtainable in the widely spaced village.* On leaving the shelter of one village a man had no cover to look to of any description unless a happy chance took him to another village. It has been said by a high authority (Moltke) that the greatest obstacle to an attacking force is a plain, and one could, standing on the top of Shoushanpu, well picture the truth of this statement. Shoushanpu, is an example of a small locality invested by circumstances with extraordinary importance. The loss of the Shoushanpu position meant the loss of Liao-yang, and the loss of Liao-yang, as already pointed out must inevitably lead to the evacuation of the whole Russian line of defence.

The country over which the 10th Division attacked was not so difficult. South of Ta-orr-tun it is undulating, and gives a good deal of cover in the rather steep folds which lie at foot of the undulations, and also in many small nullahs. Picturing the situation as it was on the evening of the 29th August, one feels that a strong counter-stroke put in by Kuropatkin then, or the following morning, must have succeeded. The striking force might have been concentrated behind the stream and villages Chuisuinan and Binmatun, covered by the cavalry, and deploying in the afternoon on the line Wanorshun—Landiatun and westward of that place it should have been directed with its centre on Sha-ho. There was nothing but the 4th Division to stop it, and it would have been aided by flank fire from Shoushanpu.

It has been suggested that a counter-stroke might have been driven against the 2nd and 4th Armies down the valley of the Tassy brook.

* In July the Kaoliang was not cut.

It was a case in which penetration might have succeeded, but one must remember that the frontal deployment of a large force in face of an enemy like the Japanese would have been one of extraordinary difficulty.

A doubt has already been expressed regarding the feasibility of a great counter-stroke in a modern battle of the first magnitude. Apart from the question of space and time the commander waits to discover "the direction in which the enemy is making his principal effort" and he always discovers this too late.

An operation, however, such as suggested above, is not a counter-stroke; it should not be made by a reserve, it is made by a striking force which constitutes the main attack. But in this case the whole battle must receive a different complexion. It is not a defensive position which is being held. The enemy is being induced to deploy his forces in one direction by a portion of one's force while he is attacked by another, and the major portion. It is the utilization of the ground favourable for the purpose to bring about the same situation as is aimed at in every attack.

In considering all such questions, however, in considering why Kuropatkin did not do this, or that, or the other, which to us it appears would have given him certain victory; when we ask ourselves why he did not order an attack here or a counter-stroke, there: why he fought at this place when he wanted himself to fight at an obviously better place, we must try to realize what the influence of the Commander-in-Chief is, and what effect an order issued by him has on all those who come under his command.

It is one of those factors which have already been alluded to, a knowledge, or at any rate a realization, of the existence of which is essential if criticism is to be of any value. And some consideration of the value of this factor is in particular necessary, if we are ever to understand this war properly.

If I, commanding an army of 300,000 men give the order "The army will march to Timbuctoo," not a man will move. It is only after hundreds of other people have given thousands of other orders and when these orders have been written, printed, read and discussed and have percolated down through all the different grades, right down to the private soldier, that my simple order will even commence to be put into execution. If

now, every order following on my original order is not given with the same energy and desire on the part of the giver, to get to Timbuctoo, there will be some weakening of the resolution required to get there. If my subordinate commanders, in issuing their orders, have in their minds a doubt as to the possibility or advisability of going to Timbuctoo, if some say we may order but we shall never get there, and others say it would be much better if we went to the Fiji Islands, and others advise that we stay where we are and let the Timbuctooites come and attack us, and if the Supply and Transport people say there is nothing to be got in the way of supplies but cocoanuts in Timbuctoo, and the medical people, that there is nothing but sand, and that grit, however good in men's hearts, is bad in their stomachs, and so on, then you may be sure that one of three things will happen:—

1. Either the army will arrive at Timbuctoo too late to be of any use, or ;
2. The commander-in-chief's resolution will be shaken and he will say, "Yes, why not the Fiji Islands, or even Patagonia ;" and so the army will go to some quite different place, or ;
3. It will never get anywhere at all.

In a great army it is not enough for the commander-in-chief to give an order, he must carry conviction ; and the larger the army the greater souled must he be to be able to carry this conviction, unless the army already possesses it, unless his subordinates, one and all trust him from the start and play up to the full bent of their power to support and forward his aims. The Japanese possessed this conviction, every man in the army was convinced that they must get Port Arthur, that they must defeat the Russians at Lio-yang, that they must drive them North of Mukden. The Russians on the other hand had no conviction. The Czar, the Viceroy, the Ministry of War, the Commander-in-Chief, and the subordinate generals, and the Russian public, every one wanted to do things in a different way ; and the poor private soldier was the only one who had any conviction, and that was that he was there to be killed, but he did not know what for.

We see therefore that an order issued by Kuropatkin was quite a different thing to an order issued by Oyama, and we should bear this fact in mind also when contrasting the length and detail of Kuropatkin's orders with the simplicity and conciseness of those issued by Oyama.

Moreover, Kuropatkin had to deal in many cases with subordinates who knew practically nothing about the handling of troops, of strategy or of tactics—with men like Sassulitch who had for years been Civil Governor of Warsaw, and Simonov, coming to command a cavalry division on service after 15 years passed in Civil employ, and Count Keller, since 1900 Governor of Sekaterinow, and before that Director of the Corps of Pages.

It is, however, impossible to acquit Kuropatkin of the charge that he failed to imbue his subordinates with the offensive spirit. Great soldiers are often termed "great leaders"—They lead their men not in person but in spirit. Kuropatkin did otherwise, he pulled his subordinates back. In his "disposition for the Army of Manchuria, No. 3" dated Liao-yang, August 1904, 1-15 A.M. we read "Should it prove correct that considerable hostile forces have crossed the right bank of the Taitsu-ho with the object of turning our left flank, I shall order the troops to be conducted back into the entrenched position on the line of villages Tsin-or-schun—Siu-want-sy—Tschon-tsia-lint-sy—Yui-chuan-niao—O-fa, with the object of contracting the defensive front on the left bank of the Taitsu-ho, and attacking the enemy on the right bank of the Taitsu-ho after concentrating a reserve. I therefore order"—here follow detailed orders for the evacuation of the different sections of defence, and the disposition ends with the words "This disposition is not to be carried out until especially ordered." Although the execution of this disposition was, therefore, dependent on a special order to be issued by Kuropatkin, we see it, nevertheless, reacting instinctively on Stackelberg in his defence of the Shoushanpu position. He had repulsed the Japanese all along the line, but no thought of a counter stroke seems to have entered his mind. He did not even consider it necessary to continue in possession of the ground which for two days he had made such great sacrifices to retain. On the contrary, he thought that he had fully done his duty in beating off the enemy's attacks, and that the only thing necessary to do now was to effect an able retreat on Liao-yang. And so he used his general reserve, not for the purpose of defeating the enemy but in order to strengthen his defensive line in dribblets, until the hour for retreat should arrive. Not in this way have battles ever been won. Here, if ever, it was a case, for Stackelberg, of forgetting those things which are behind and reaching forth unto those things that are before, pressing towards the mark for the prize of victory. But Kuropatkin would not let him or his other subordinates forget the things

which are behind, and so they could not touch the mark which alone gives the prize.

MANJUYAMA.

There is a German military proverb "When in doubt attack" and Manjuyama is an argument in favour of its soundness. It is true that Kuroki was not in doubt, but he was acting at first under an entirely false impression—*viz*, that the Russians were only thinking of retreat. The lesson, however, is the same. An ordinary man, in the isolated position in which Kuroki found himself, on learning that he was acting under a wrong conception, would have awaited events on the other portion of the battlefield, trusting that success there, would automatically remove the pressure in front of him. He might have attacked the enemy but rather with a view to keep touch with him. He might have entrenched with the idea of at least hanging on to his ground. Not so Kuroki.

He attacked as if he believed that the forcing of the Russians from Manjuyama and the neighbouring heights was the one thing required to bring victory to the Japanese armies. And we now know that such action practically saved him and did tend materially to win the battle.

Conceived under a mis-apprehension it led to a favourable result, because it was executed in accordance with a sound principle. The walk over the four miles from the railway to Manjuyama was an experience. It rained hard with the result that the whole country was turned into a vast slippery sticky slough, extremely difficult to walk over. The roads became worse than the fields. The 8 miles there and back were as fatiguing as 20 miles under ordinary conditions. One was able then to realize the effect of rain on this country, and what it meant to large bodies of troops who had to march loaded with rifles, packs and ammunition, and to the artillery transport and trains. It must have been heart-breaking work to the troops at the time, and justifies to the full in my mind the delays which are attributed in the various accounts to the effect of the rain.

The fighting at Manjuyama is fully described in the official histories. It was captured by the Japanese and desperate efforts made by the Russians to recapture it, as it was to be the pivot for Kuropatkin's great counter-stroke.

Kuropatkin had based his orders of the night of the 1st September on the supposition that the troops on Manjuyama

would still be in possession of the hill, his plan was to pivot on it, and attack from the N.-W. and N. with the X Army Corps, the I Siberian Army Corps and the 54th Division, keeping the III Siberian Army Corps as reserve in rear. When it was found that Manjuyama was lost, new orders were issued primarily with a view to regaining it.

The XVII Corps was directed to "defend energetically" the positions of Sikwantun and Manjuyama, while the I, III Siberians and X Corps, under the personal command of General Kuropatkin, pivoting on the XVII Corps, were to attack and drive the Japanese into the Taitso river.

The 3-45 p.m. message to Stackelberg reads "You constitute the left wing of the army during its advance, you cannot be supported to-day because the reserves are actually concentrated for an important task, the occupation of the Sikwantun position abandoned during the night.....Our old position at Sikwantun ought to form, so to speak, the pivot of the army in its wheel to the right."

As we stood on this Manjuyama I tried to discover what there was about it which constituted it a pivot. It looked to me an ordinary sort of a hill like any other hill. Why should Kuropatkin modify his whole plan of attack for the sake of this little hill. I grant that the Japanese in capturing Manjuyama and Wuting-shan had gained two "tactical points" of some value as the area by which the I and III Siberians and the X Corps must move their line of deployment was thereby somewhat contracted, and probably the roads (such as they were) were blocked by the transport of the XVII and X Corps (though the roads do not exert much influence in those parts). We may admit, however, that the difficulty of deployment would have been increased.

But in what way was Manjuyama a pivot and in what way would the Yentai Coal mines, in the event of adopting the British Official Account suggestion, have become a pivot?

What is a pivot when used in a military sense? Is it a geographical feature? Is it something which is necessary for the direction of a manoeuvre? Cannot a force swing round to the right or left unless one end of it is tied to a pivot? Are we not in fact in danger, as so often occurs, of being obsessed by a word or an expression of which we do not fully understand the reason; was not Kuropatkin so obsessed?

It seemed to me that with particular reference to Kuropatkin's counter-stroke, it was a matter of comparatively small importance who stood on the morning of the 2nd September on the top of Manjuyama, the Russians or the Japanese.

What does constitute a military pivot is a point of contact with the enemy, whether this be on a hill, in a village, in a wood or in the midst of an open plain. It is a point at which the enemy is fixed, against which he is induced to deploy and expend his strength, while one's main forces manœuvre with a view to falling on him from another direction. Having thus fixed the enemy it does not matter, it is not of itself of vital importance, whether he or you hold a particular village or hill, or imaginary point in a plain. What does matter is that you have fixed him, have induced him to deploy in a certain direction, to concentrate his energies in that direction to an extent which makes it difficult, or impossible, for him to meet your main attack when it falls on him from elsewhere.

It may of course be argued that Manjuyama and Sikwantun were tactical points, and as such it was necessary to capture them. This is true, their possession by the Russians was necessary for the ultimate purpose of driving Kuroki across the Taitsu. But a "tactical point" should not be allowed to loom too large and out of proportion with the general scheme, which was what Kuropatkin permitted, and there was no reason to retard the great counter-stroke or make its progress dependent on the capture of these places, no more, in fact, than in the attack on any defensive position is a great turning movement to be delayed till the position itself is captured by the frontal attack. The tyranny of words, as so often happens in war, here held its sway over Kuropatkin.

Had Kuropatkin not concerned himself too much about the loss of Manjuyama, had he not thought it vital to his scheme, that Russians should be standing on the top of the hill instead of Japanese; had he, while directing the XVII Corps to continue its attacks in order to keep the Japanese fixed, continued his offensive movement without any cessation, he would have given his counter-stroke its one chance, and, on paper, a very good chance, of success.

This, of course, provided he put without hesitation the whole lot into the fight, the I Siberian Army Corps, the X Corps, the III Siberian Army Corps and Orloff's detachment.

Moreover, if Manjuyama had not been invested with a fictitious importance by reason of its being looked on itself as the necessary pivot to the whole Russian movement, it is probable that Orloff would not have marched to the fate which actually overtook him. He was originally intended to co-operate with the I Siberians.

THE ROYAL AIR FORCE AND ARMY CO-OPERATION.

The Air Force Point of View.

(BY ADASTRAL.)

1. An article was published in the October number of the "United Service of India Journal" setting out the views held by a number of army officers on the question of Army Co-operation; the purport of this article is of a highly controversial nature and it is the aim of these notes to join issue with the writer on certain of his points, setting out at the same time the Air Staff point of view.

2. The article opens with a harrowing account of the state of Army Co-operation Squadrons during the major part of the last war, presumably to prepare the ground and imbue its readers with the right spirit for what follows. In the first place such a sweeping statement is very misleading and in the second it is obvious that some excellent reasons must lie behind the cause, even if it were strictly accurate, which it is not. The real reason is given, though carefully camouflaged, *i.e.* "all the best and most brilliant pilots were taken for air fighting." Why then was it necessary, even vital, to have to starve one of the most important branches of Air Service activities during the war? The answer is simple—"To protect that branch." This may sound paradoxical, but a moment's reflection will discover the reason. The enemy possessed a large Air Force and was striving hourly to attain that elusive goal "Air Supremacy." He put his best pilots and best aircraft into this work, he even went farther and concentrated the best of the best in "circuses" such as Baron von Richthoven's. Left to their own devices these German fighting forces would have paralysed our air service and the army would have been deprived of its eyes. Since these were the enemy's tactics then ours had to conform to, or improve on them, and that is why it was necessary to concentrate the best we had in our fighter squadrons. It was only a case of obeying one of the principles of war—Protection. It is not suggested for a moment that "dud" pilots should be reserved for Army Co-operation or indeed any other squadrons, but in criticising the skill and ability of these pilots the points emphasised in this paragraph must be remembered.

3. The next contention is to the effect that R. A. officers rarely served in Army Co-operation squadrons or were in any case not permanently earmarked for such work. It is freely admitted that it is desirable to utilise officers with special knowledge where that knowledge will be most useful; it must be remembered, however, that these officers joined the flying service for general flying duties and that there are a variety of good reasons for not employing them where at first sight they would appear to be most useful. The most important point has already been discussed in para. 2, and one more will suffice. The R. F. C. consisted of large numbers of officers with no previous service training; every regular officer was therefore worth his weight in gold and had often to be employed on duties which few non-regular officers could perform. Man power was ever a grave problem with us as with the Army.

4. Passing from this gloomy picture of the war we had hoped for a glint of sunshine, but the fog has thickened and has now enveloped the post war Air Staff. Surely the writer does not seriously believe the gossip which he has heard about the policy of the Air Force high command. It will be as well, however, to set out very briefly their teachings, since his statements do possess germs of truth and as such, may be doubly misleading.

(*Note.*—These opinions are known to be held by the French General Staff and most probably by the German Staff as well.)

Future wars on a continental scale are aerially envisaged as follows:—

- (a) At the beginning, possibly even before war has been declared, both sides will conduct an intensive bombing campaign with the object of destroying their opponent's nerve centres, military centres, industrial centres, etc., and generally spreading alarm amongst the civil population whilst endeavouring to embarrass all military preparations as much as possible.
- (b) Coincident with these attacks will be an attempt to attain air superiority by the destruction of the enemy's aircraft, personnel and air bases.
- (c) Following on this "grand bombardment" the war will begin on more or less normal lines on the other two dimensions, it being assumed that it will be highly dangerous to start concentrations or overseas movements of large forces until the first phase of this intensive bombardment has expended itself.

These views then differ very materially from those set out in the article under consideration and there is still one view which ventures rather more into the realms of conjecture. The Air Staff go one step farther and assert that it is now within the realms of possibility that the results of this initial bombardment may be so far reaching as to end the war without recourse to the more normal methods of war. That such a result is possible is undeniable; that it is probable anyone may well hesitate to say since it must depend on such a variety of unknown factors as to make speculation futile. In concluding this paragraph the writer is assured that he can hear plenty of "topical" shop at any Army Co-operation Squadron in these days, of a kind that would gladden his heart.

5. There are at Home today 4 Army Co-operation Squadrons and one Wing—the only one existing in England it should be noted—of which two are, or will be, located at Aldershot, one on Salisbury Plain together with a School of Army Co-operation and one in Kent. The statements in this article would seem to indicate that the writer is thinking in terms of England as a great continental military power; but we do not possess an Army the size of France and so the position is really nothing like so intolerable as he would have us believe. England has returned to her pre-war policy of maintaining a small and highly efficient expeditionary force and it is contended that the allotment of Co-operation Squadrons is in proportion to the needs of this force. To stress his point, however, the writer goes on to raise the bogey that these pilots and aeroplanes are liable to be taken away to meet the needs of Home Defence. This contention need not be considered seriously since it is just as unlikely as that the Navy should take transports or monitors to help to fight the enemy's battle fleet; they would be just as unsuitable as Army Co-operation aircraft against fighters or multi-engined bombers flying at 20,000 feet.

6. The question of specialization forms the subject of the next paragraph, and it can be stated at once that officers do in actual fact specialize in the various branches of Air Force activity of which Army Co-operation is one. It is obvious that they must, since considerable time and money is expended on their training, which would otherwise be wasted. It follows logically, further still, that when officers are posted overseas they will nine times out of ten continue to be employed on those duties in which they are most experienced. The senior ranks and also a proportion of

more junior ones go on the Staff, as is the case in the army and commands are quite naturally filled in the same way as in our sister service, but during his active flying career an officer will almost invariably continue for long periods on that work for which he has been specially trained, and all officers trained for some branch of service work.

7. Co-operation is now considered in more detail and a few general remarks are necessary to clear the air in regard to certain impressions which these paragraphs may leave:—

- (a) Long distance or strategic reconnaissances will most usually be carried out by bombing aircraft, both by day and by night, tactical reconnaissances only are carried out by Army Co-operation Squadrons.
- (b) The extent to which partially trained pilots or observers will be employed in Army Co-operation Squadrons will depend on the wastage which will itself depend very considerably on the degree of air supremacy attained. It can be safely stated, however, that the personnel of these squadrons will not be touched except under abnormal conditions; it would obviously be unsound to do so from an economic point of view.
- (c) The question of flights by staff officers is next raised. It is at once agreed that flights by staff officers will be of the greatest value; it must be remembered, however, that the Royal Air Force is only one link in the Intelligence chain and that a sense of proportion must be kept in considering this problem.

We are now confronted with what is alleged to be a species of stalemate in the development of aircraft and artillery co-operation. It is as well to point out at the beginning that the control of artillery fire by radio-telephony is much farther in the offing than the writer supposes, and must remain so until two way apparatus has been invented. There is no reason why pilots should not be trained in all branches of spotting and in fact they are, and carry out their duties intelligently and with initiative. It is agreed that it may be very useful for a battery commander to fly over his area periodically; it is not agreed that it is desirable for him to command his battery from the air by reason of the isolation which this would entail; such a condition is obviously undesirable since important changes might be taking place of which he would remain in comparative ignorance. It is not contended that R.A. officers would not be better than R.A.F.

officers in certain ways, but their employment on such duties would be a refinement rather than an essential. The question of small wars is next considered. It is readily admitted that officers who have spent many years on the frontier or other such places would make most efficient observers once they were trained and provided they had the aptitude; at the same time it has been amply proved in actual practice that Air Force officers can and do carry out this work extremely well, *vide* Iraq, Somaliland, N.-W. Frontier, etc., and since they are all fairly young they are quick to pick up any new work.

8. The simplicity of flying forms the theme for the next paragraph and it will be as well to state at once that the Air Force does not try to make any mysteries about flying. Everyone admits that it is quite easy to teach the average individual to fly—witness the progress of the light aeroplane clubs—but merely teaching an officer to become an aerial chauffeur is not the end of everything. Such an individual is of very little use to anybody and a danger to himself, and while he may be taught to fly in a few weeks it takes many months for him to become an efficient pilot, to learn about his engine and aeroplane, and to acquire a working knowledge of such essential subjects as Air Pilotage, Wireless Telegraphy, and the Theory of Flying. Any young Air Force officer of average intelligence can be taught about military formations just as easily and probably more quickly than an Army officer can be taught to be an observer, and this contention can be proved by innumerable instances. The paper goes on to state that in all probability the Army could furnish 10 squadrons of pilots and observers who could quickly be made efficient; this statement is probably true to-day although it cannot remain so for very much longer; it is however, quite a different proposition to take officers with no flying experience, such as war training with the Flying Services.

9. The scope of the paper now narrows down to a more detailed examination of certain artillery problems. In the first place it is entirely agreed that tactical control of artillery fire from the air is impracticable in moving warfare, though it may be possible in static warfare with the aid of aerial photography. In the next case the question of spotting for medium and heavy batteries is considered; spotting for these types of artillery is the chief rôle of the co-operating aircraft and consists normally of pre-arranged or impromptu shoots; the former needs no special comment; the latter take place against targets sent down by the

pilot which the batteries engage or not as they think best, and it is this type of shoot which it is presumed the writer has most in his mind. The problem is not so easy as it looks however; at present the pilot sends down these targets and takes no further action unless his battery can engage them; a gunner officer piloting the aeroplane is not in a very much better position than the R.A.F. officer, except probably in the matter of discriminating between likely and unlikely targets, since he can exert no control over the tactics of the battery. He is not in touch with the local ground situation and however favourable a target is discovered, reasons unknown to the pilot may compel the battery commander to ignore it; the whole problem is one of co-ordination and co-operation and a purely local view is apt to be misleading and erroneous.

10. The normal allotment of aircraft is one squadron per corps for all army work, not artillery work alone. In actual practice Army Co-operation Squadrons are trained with divisions, one flight being allotted for artillery and two for close co-operation duties; in peace time each flight consists of 4 aeroplanes which may be increased to six or even eight in time of war; in any case four is the minimum number of aeroplanes which are necessary to maintain one in the air continuously all day. In the case of an expeditionary force of say two or three divisions it is highly probable that one squadron will be allotted solely for co-operation with heavy or medium artillery.

11. The question of using radio-telephony for spotting has been dealt with already and it will be sufficient to add that even when it has reached the practical stage there are likely to be many problems to be solved; the question of secrecy being perhaps of primary importance.

The article appears next to visualize the early advent of the helicopter or Auto Giro, but there does not seem to be much likelihood of the size of landing grounds being very materially reduced in the near future; the skill of the pilot remains the chief factor.

The paper ends up with certain recommendations and suggestions with which it is now proposed to deal.

In regard to A, which proposes an entirely separate Army Air Service, it is generally agreed that this course is bad; the writer seems to forget, however, that there are other arms in the service besides Gunners and his proposal to man the Army Air

Service principally with artillery officers is wrong; the infantry are still the backbone of the Army and must receive prior consideration.

Scheme B proposes an Army Branch of the Royal Air Force, again be it noted, manned chiefly by Gunners. The actual difficulties in working such an organisation as he visualizes would not be great, since the obvious course would be to second Army officers to the R.A.F., as is done by the Navy, when they would automatically come under Air Force discipline.

*In Scheme C, which is considered in conjunction with Scheme B, a reorganisation of squadrons is proposed, mainly it would appear to the benefit of the Royal Regiment. The writer says he prefers Scheme C, but of all his solutions this one appears to be the most impracticable; Scheme B undoubtedly offers the greatest advantages and the most hope of maintaining an efficient service. Scheme C seems to lack most of the essentials of efficiency. Does the writer seriously propose to keep three or four aeroplanes sitting inactive on the aerodrome waiting for the battery personnel to fly? Who is going to be responsible for these aeroplanes? What guarantee is there that the landing ground will be reasonably close to the battery? Will the Major be willing or able to be away from his battery for five or six hours during a big battle? What is going to happen about air casualties to battery personnel? These are just a few of the more important points that this proposal raises, but they are sufficient to prove its unsuitability.

In conclusion the paper under review may be summed up briefly as follow:—

- (a) It is called "The Royal Air Force and Army Co-operation;" it appears, however, to deal almost exclusively with Artillery Co-operation, the other branches of the Army receiving scant consideration; it is not an exaggeration to say that certain of the suggestions put forward would actually deprive most of the other arms of the majority of their aircraft.
- (b) The writer quite rightly deplores mysteries about flying, if they exist, but he entirely ignores that other and most essential part of flying, the technical

(* Note.—Scheme 'C' suggested affiliation of squadrons to the artillery of formations for which earmarked. Gunner officers to be trained as pilots for fire control and other arms to supply observers for reconnaissance.—EDITOR.)

side, without which no pilot or observer can hope to become even reasonably proficient. The contention that anyone can be taught to fly in a very few weeks is quite correct; it is also just as accurate to say that anyone can be taught to shoot a gun in a few days, but he couldn't be called an efficient gunner anymore than the officer with a few weeks' training is an efficient pilot. They would both be highly dangerous to themselves and other people.

- (c) What is probably one of the most difficult and vexed of all the problems is not touched on at all; the isolation of the pilot. The tactical relationship between the situation as known in the air and that as known on the ground must often be somewhat remote and in urging commanders to direct any operation from the air this point must not be neglected.
- (d) In his anxiety to make his points from not very secure premises the writer has brewed almost as much mystery broth in his Gunner cauldron as ever came out of the Air Force one. We are neither of us mystery services and the sooner it is realised on both sides than we can do some of one another's jobs and do them well, even without the professional touch, the sooner will the science of artillery co-operation be advanced.
- (e) Finally there comes the personnel question. Both services are maintained at their very lowest economic establishment, and that exchange of officers which is so desirable is therefore very difficult and often impossible. The Air Force has always desired to have an establishment of seconded officers and has continually pressed for them; unfortunately they have only been forthcoming in very small numbers. This has been our loss and also it is ventured to suggest, the Army's. It can, however, be taken as a sign that the work of the Air Force has not been ineffective even when it has fulfilled technical rôles for the Army; if it had been so the situation must have been very different.

THE MOPLAH REBELLION 1921-22.

By Captain W. St. J. Carpendale.

1. Owing to the conditions under which the Army in India may be called upon to fight being so numerous, the enemy's mode of fighting and the theatres of operations so diverse, it is considered that the operations in Malabar in 1921-22 present many useful lessons to those who have never taken part in jungle warfare, or duties in aid of the civil power.

Malabar is a strip of country on the South-West coast of India. It is bounded on the South by the State of Cochin, on the East by the Western Ghats and the Nilgiri Hills and on the North it stretches as far as the port of Mangalore.

This area is divided into a number of administrative districts. Those in which military operations took place were Ernad, Wallavanad and Ponnani. These cover an area of about 1,780 square miles, of which only 400 are cultivated, the remainder being hilly land covered with jungle. These hills run from about 400 feet to 2,000 feet high in the coastal region and rise some 7,000 feet in the East, where they merge into the Nilgiris.

The Moplahs are descendants of Arabs, who settled on the coast about 800 A.D. Their population is over a million, but is mostly concentrated in the three districts already mentioned, where the males number some 250,000. From their earliest days they have been turbulent and fanatical. They have taken part in no less than 33 outbreaks within the last 80 years. In most of these it has been found necessary to employ military aid to restore order. From 1849 till the last outbreak British troops have always been employed against them, as experience has shown that Indian troops cannot always be relied upon to deal with them with the firmness that the circumstances demand.

Moplahs used to be enlisted in the Indian Army, but it was found that they were not amenable to discipline and unsatisfactory when serving outside the Madras Presidency. Consequently their enlistment was stopped about 1909.

Military operation in Malabar are difficult to carry out as numerous rivers and close cultivation alternating with thick jungle render movement difficult. There are numerous metalled roads, but any movement off them is almost impossible.

Villages in the coastal region are not well defined but extend for miles along the roads. Houses are strongly built of soft red stone from the neighbouring hills. They usually consist of two or three stories roofed with tiles. Held by a few determined men these houses are capable of prolonged defence. Mosques, which are very numerous and solidly built, were usually selected by the Moplahs for making their last stand.

Further inland the country is hilly and the villages more defined. In place of cultivation there is thick jungle. The country is eminently suitable for guerilla warfare and affords great scope for ambushes.

Surprise by our troops was difficult to attain, as in spite of the cover available, they were under continuous observation from rebel scouts, who occupied the numerous hill tops.

The principal rivers, taking them from North to South, are the Beypore, Karim, Puzha and the Ponnani. These flow between banks covered with jungle to the waters edge. At the time operations were being carried out they were in flood and quite unfordable.

Water is plentiful throughout the country, as each group of houses has a well. The climate is hot all the year. In June the monsoon breaks and for four months the rains are heavy. The average rainfall from June to September is 80 inches.

2. At the outbreak of the rebellion, on the 20th August 1921, the G. O. C., Madras District had the following troops at his disposal :—

| | |
|----------------|---|
| Bangalore ... | The Queen's Bays. 2nd Battalion, The Dorset Regt. 64th Pioneers. 2nd Battalion, 61st Pioneers (Disbanding). Two Field Companies S. and M. One Field Troop and one Field Company S. and M. (Disbanding). Two Batteries, R. F. A. |
| Wellington ... | 1st Battalion, Leinster Regiment (detachments at Madras, Calicut, St. Thomas' Mount), |

St. Thomas' 88th Carnatic Infantry.
Mount

Cannanore ... 83rd W. L. I. (On leave after Field Service.)
2nd Battalion Malabar Infantry. (Disbanding.)

Trichinopoly... 86th Carnatic Infantry. (Reorganising as
a Training Battalion.)

It will be noticed that a considerable proportion of these were being disbanded, or else reforming as Training Battalions.

In addition serious rioting in the mill area had commenced in Madras and there were prospects of serious disturbances in Guntur. The 86th Carnatic Infantry were fully occupied in quelling riots in Trichinopoly. Once the rebellion broke out the 83rd W. L. I. at Cannanore were engaged in keeping order in the country to the north of Calicut.

Troops had also to be kept in readiness to deal with expected riots in North Arcot, Chittoor and Cuddapah. On the 25th July reports of the manufacture of arms in Malabar gave the civil authorities the first warning of impending trouble. A search carried out at Pukkotur led to a riot and the local police were over-powered. The O. C. at Calicut was asked for military assistance. He at once applied to Madras District for reinforcements. But it was not till the 14th August, when three platoons of the Leinster Regiment reached Calicut from Wellington, that he could send one platoon to Mallupuram.

By this time the civil authorities in Malabar had become thoroughly alarmed. The Government of India asked for one Battalion of Indian Infantry to be made available to assist the police in searches for arms. Consequently the 64th Pioneers at Bangalore were held in readiness to move at 24 hours' notice.

On the evening of 19th August 100 men of the Leinster Regiment from Calicut proceeded by rail to Tirurangadi to assist in a search for arms. This was done without incident on the 20th, but soon after a riot broke out at Parappangadi. Some 5,000 Moplahs were involved and a British Officer and a British Police Officer were murdered and the Railway Station and a portion of the track towards Calicut burnt.

The next day the Leinster Column proceeded towards Calicut, *via* Parappangadi by road. It was attacked several times, losing two British Officers and several men. As martial law had not been declared, the Officer Commanding merely took steps to defend his

detachment and took no offensive measures against the rebels, who appeared to imagine that the Government and the military were afraid of them.

The question here arises as to the necessity of the immediate declaration of martial law when troops are called out in aid of the civil power, especially when everything points to further disorder on the part of the mob. Had the troops been free to act offensively and vigorously against the rebels, the rising might have been squashed at birth. As it was, the defensive attitude of the troops was the signal for a general flare up throughout the district. The rising at once assumed alarming proportions. Police Posts were stormed, Government building burnt and looted and an organized attack commenced, as in 1919 in the Punjab, on communications; bridges, culverts and telegraphs being destroyed.

On arrival at Calicut on the 22nd August the O. C. Leinster Detachment put into force the local Internal Security measures and collected as many of the Auxiliary Force as possible. On the evening of the same day he heard that his platoon at Mallapuram had been surrounded, their motor transport burnt and drivers killed.

On the 21st August the Bangalore Mov. Column consisting of :—

One Squadron. Queen's Bays,
One Section, 69, F. Bty. R. A.,
2nd Battalion The Dorset Regiment,
One Platoon, Sappers and Miners,
One Company, 64th Pioneers,

had been despatched to Podanur. The following troops met the Mov. Column at Podanur, being railed from Madras—

One Company, S. Indian Railway Battalion (Auxiliary Force).

One Company Nilgiri Malabar Battalion (Auxiliary Force).

Two Platoons 83rd W. L. I.

On the same day all troops were put under the command of the Officer Commanding the 1st Leinster Regiment and he was given a free hand as regards military action.

Martial law was declared in the disaffected area from 25th August.

By the 24th August the whole Column had been concentrated. The first intention was to concentrate at Podanur, as it was not known how far west of that place the railway had been

damaged. But thanks to the initiative of a patrol train of the S. Indian Railway, manned by Auxiliary Force personnel, the line as far west as Tirur was saved from destruction and the Column concentrated there.

On the 25th August H. M. S. Comus arrived at Calicut with a platoon of the 83rd W. L. I. from Cannanore. This decided the O. C. Leinster Company at Calicut to move on Mallupuram at once, without waiting for the Bangalore Mov. Column. The situation there was very grave and in the light of after events there was no doubt that he was right, but it was a bold decision to make at the time. Calicut was by now filled with thousands of Hindu refugees and the problem of feeding them and preventing them looting was a great strain on the police of the city. At the same time an attack on the city by the Moplahs was thought to be imminent. Realising that "hesitation and delay would be interpreted as signs of weakness" and that "a vigorous offensive, strategical as well as tactical, is always the best means of conducting operations" in the East, the Officer Commanding moved out of Calicut again on the evening of the 25th August with a force of 100 men. His transport consisted of motor lorries. No opposition was expected as far as Kondotti. But after leaving there on the morning of the 26th August the road was found to be blocked by trees felled across it.

The formation adopted by the Column was as follows—

The lorries moved in the centre of the road with the troops on each side. There was a small advance and rear guard each of which had 2 L.Gs. There were no flankers out in the jungle. These would, however, slow up the pace of the Column. The Column had to move as fast as possible owing to the lorry transport, which had great difficulty in keeping down to $2\frac{1}{2}$ miles an hour.

On reaching Pukkottur, the head of the Column was fired into from a group of houses on the side of the road; at the same time the front and rear were attacked by some 2,000 swordsmen, who charged out of the jungle on both sides of the road.

The Lewis Guns at the head and rear of the Column were of the utmost service in keeping off the enemy, who attacked several times with the greatest gallantry.

The houses ahead of the Column were eventually cleared with the aid of a Stokes Mortar, which was carried in one of the lorries. But it was not till after four hours of continuons fight-

ing that the rebels were finally driven off with the loss of 400 killed alone. Many of these were bayonetted on the road.

Mallapuram was reached by the evening, where the Column remained till the arrival on the 28th August of the Bangalore Mov. Column, which marched up from Tirur.

The action described had a great effect on the rebels, who completely altered their tactics and made no more heavy attacks on our troops, with the exception of one, on a company of the 2/8th Gurkha Rifles, which will be described later. They contented themselves with ambushing small columns on the march, firing into them, attacking transport and isolated parties, then retiring into the bush before they could be attacked themselves.

The value of the Stokes Mortar against enemy in buildings is well illustrated in this action. Casualties would have been far heavier if the houses had been carried supported only by fire of rifles and Lewis Guns.

In this connection it is interesting to note that the Leinsters were the only unit which had a Stokes in Malabar. Theirs eventually had to be returned to arsenal owing to the ammunition being defective.

3. The operations carried out by the Bangalore Mov. Column will now be dealt with.

The O. C. on arrival at Mallapuram on August the 28th decided to garrison as many important localities as possible with the troops at his disposal, at the same time dealing with individual gangs of rebels by small Mov. Columns based on these places. The Columns moved out daily in the hope of being attacked. The Moplah, however, would not attack as a result of the lesson taught him at Pukkottur by the Leinsters. But at the same time constant ambushes took place on convoys moving out to ration the various posts. Some of these were successful.

There were not sufficient troops to garrison and hold the area, provide strong escorts to the convoys and at the same time provide Mov. Columns in sufficient strength to carry out extended operations.

The squadron of Queen's Bays was sent back to Bangalore and the artillery was put into defended posts, as the country was unsuitable for their employment.

The police of the district had ceased to exist. The troops could obtain little or no information on which to act,

Thus areas cleared of the rebels could not be kept clear if the troops moved elsewhere. The situation was one of stalemate. There was also the great danger of the rebellion spreading. At a conference held on the 26th September between the O. C. Force and the Civil authorities at Tirur, it was decided to apply for two extra battalions of Infantry and a Pack Battery and to organise six companies of Auxiliary Police from local ex-soldiers who would know the country and who would be in a position to supply the much needed information : and finally to ask for increased powers under martial law.

A Summary Court set up on the 25th August was only empowered to deal with cases punishable by the ordinary law with not more than five years' imprisonment. Only comparatively minor offences could therefore be dealt with by this court.

On the 7th September a Special Tribunal, set up under the orders of the Government of India, was given full powers of punishment, but admitting appeals against the death sentence and imprisonment for over ten years.

As most of the cases dealt with were of this description justice was not very speedy. The appeal prevented the quick execution of sentences in the case of leaders and others convicted of waging war and murder.

To sum up, the work carried out during this phase of the operations by the Bangalore Mov. Column, of establishing posts from which columns were sent out into specified areas, failed for the following reasons:—

(a) The Moplah would not attack formed bodies of troops nor await attack.

(b) The shortage of troops and their consequent dispersion. (Appendix A shows how the force was split up into a number of posts and is the distribution of the Force on the 7th October.)

(c) The difficulty of obtaining any information.

(d) The absence of any well-defined objective which would force the Moplahs to stand and fight.

4. On the 15th October, in accordance with the requests for increased powers under martial law, Military Courts were established.

On the 16th October the re-inforcements asked for on 26th September arrived at Tirur. They were:—

10 P. Bty. R. A. from Jutogh.

2/8th Gurkha Rifles from Lansdowne.

3/70th Burma Rifles from Burma.

1 Section of a Ford Van Company.

Successful mobile operations were commenced at once, with the object of clearing the country to the west of Mallupuram and handing it over to the Auxiliary Police, before proceeding to the more difficult country to the East.

A number of small actions were fought, in which the garrisons of the numerous posts co-operated.

By the end of October, however, the rebellion had spread to the north of the Beypore River. To cope with this new development two more Bns. of Infantry were applied for.

In the meantime some companies of Auxiliary Police were sent across the river, while the troops carried on with the task of rounding up rebels to the west of Mallupuram.

An incident during this period will be described, as it teaches the value of flankers, who undoubtedly prevented the rebels from adopting their usual tactics.

A gang was located at Pukkottur. The 2/8th Gurkhas, less one company, were railed from Tirur to Feroke, with orders to co-operate with another column from Manjeri against the gang. As the C. O. of the 2/8th expected to have to move off the roads into the jungle, he left the Vickers Gun Platoon behind, so as not to be encumbered with more mules than necessary.

The Column arrived at Kondotti from Feroke without incident, where it went into perimeter camp for the night. Here information was received that the enemy, numbering some 1,500 men, intended to attack camp, or the Column on the march, the next morning. The night passed without incident, the march was resumed the next morning, the formation being as shown in Fig. I.

The leading company detailed to march in the jungle could communicate with the road by voice or whistle; nothing could be seen of it from the road. Lewis Guns were all man-handled. The men of the Main Body marched in file on both sides of the road, the middle being left clear except for transport. The pace varied with the thickness or otherwise of the jungle, but averaged $1\frac{1}{2}$ miles an hour. Even this pace entailed great hardship on the flankers, whose clothing and equipment were torn to ribbons,

When the Column arrived at a bend in the road, it was fired on from a hill on the left flank, about 400 yards away.

The top of the hill was bare of under-growth, as is usually the case in Malabar, but the slopes were thickly wooded.

The Column halted and the men faced outwards, ready to receive the expected assault. At the same time Nos. 9 and 11 Platoons received orders to attack the hill in flank from the South-West, under covering fire from the Main Body.

The two platoons moved up the flank of the hill unseen by the enemy. Each platoon had three sections in line and one in reserve. When the leading sections reached the edge of the clearing the men opened a few rounds of rapid fire then charged. The rebels were completely surprised and the greater number bolted, leaving a few stalwarts to fight it out. These, numbering 45, were killed to a man. This was the first time the Moplah had been attacked in the jungle and the action illustrates the value of surprise and offensive action. There are some lessons to be learnt from the formation adopted by the column, which, with certain modifications, was used on all other marches through thick jungle. The value of the flankers was well demonstrated, as there is no doubt that the enemy intended to attack the column at the bend in the road, under covering fire from the hill. It was found impossible for the flankers to work in complete silence. The strain of man-handling all Lewis Guns was found to be too great. After this half were kept on mules.

There was no real reserve in the hands of the C. O. The Column was split up into too many small detachments. The normal formation for a column on the march is for an Advance Guard, Main Body and Rear Guard to be detailed. Fig. 2 shows the revised formation adopted by all units after this action. The Figure shows how a battalion was divided up, but a company, acting alone, acts on the same principle, there being one platoon Advance Guard, one Main Body, one escort to baggage and one Rear Guard. Thus there is always a reserve capable of manœuvre. Fig. 3 shows an alternative formation for the Van Guard and was used by some units.

By the 9th November the second re-inforcements, consisting of the 2/9th Gurkha Rifles and the 1st Bn. R. Garhwal Rifles arrived at Mallapuram, which was then made Force H. Q. It was decided to use all available troops in a "drive" through the affected country. The "drive" to be carried out in a South-Easterly direction from the area Feroke-Calicut-Beyppore River,

The objects of the "drive" were :—

- (a) To show a display of force through the heart of the rebel country.
- (b) To impress the population with the powers and numbers against them.
- (c) To attempt to break up the remaining gangs of rebels.
- (d) Finally to drive those who would not stand to fight into the Nilgiris, where they would be forced to surrender through lack of supplies and the necessities of life.

The following troops were used in the "drive":—

3/70th Burma Rifles, less a company to garrison Nilambur and Edevanna.

2/8th Gurkha Rifles, less a company to garrison Pandikkad.
1st Bn. R. Garhwal Rifles.

2/9th Gurkha Rifles, less a company to garrison Perintalmanna.

The 10th P. Bty. R. A. did not accompany the first part of the drive. It was only used one day in the area round Pandikkad as other portions of the district were unsuitable.

There were also the usual garrisons of Suffolks at Manjeri, Dorsets and Armoured Cars at Mallupuram, Leinsters at Kottikkal and the 83rd W. L. I. and 64th Pioneers at Mannarakkat. The "drive" commenced on the 11th November. Troops formed up on their start lines on the 10th November, as shown on sketch map at end of the paper. Each unit had a front of about 3 miles. Each day's advance did not exceed 4 or 5 miles. The "drive" was carried out in stages, each stage consisting of 2 days' marching and 1 day rest.

As far as the line Nilambur-Perintalmanna the "drive" was straight forward. After passing that line the three left battalions wheeled to the South on the 23rd and on 24th a converging movement was carried out in the vicinity of Melattur, the 2/9th Gurkha Rifles operating from the South-West. On rest days the troops were rationed from the various posts, casualties evacuated and reconnaissances made. Battalions moved with three companies in line, so as to cover their frontages. Each company usually had three platoons up and one in support. Transport consisted entirely of porters. With the exception of the Pack Battery there were no mules with the troops. Officers were dismounted.

Inter-communication between companies was usually impossible. The country was too thick for visual and the use of run-

ners was unsafe. Headquarters of battalions got into touch with their flank companies on halt days. Battalion Headquarters and most of the Posts could get into touch with Force Headquarters at Mallapuram, via a Central Signalling Station established on Hill 869, 5 miles East of Mallapuram.

In order to mark the progress of the advance and assist in maintaining direction each company was ordered to light smoke signals every hour. Smoke grenades were not available, so other means had to be used: this took the form of setting fire to the nearest rebel house.

The drive progressed according to plan. With the exception of certain strong points being desperately held the greater proportion of the rebels were driven into the Nilgiris. A large number, however, doubled back behind the "drive." An area of country averaging 15 miles broad and 40 miles long was traversed. The effects of the "drive" as a whole were disappointing, as the rebels refused to fight, or even to collect to fight, except for the action at Pandikkad.

The loyal inhabitants, however, gained confidence in the Government and gradually, when the area system was resorted to, the moral effects of the "drive" began to make themselves felt and the rebels gradually began to lose heart and large numbers came in and surrendered. It was really the mobile action of punitive forces within areas, or combined between two or more battalion areas, that forced the rebels into submission.

A short description of the small actions fought during the drive will be given, in order to show what the troops had to contend with.

On the 12th November, when nearing the Beypore River, the centre company of the 2/8th Gurkha Rifles was held up by an occupied mosque. The defenders put up a stout resistance and were believed to number about 50 men armed with shot guns and a few rifles.

The mosque was enveloped by the flank platoons while the centre attempted to break in the doors, but met with no success. It was not till the roof, which in this case was thatched, was set on fire by rifle grenades, that the enemy charged out and were killed to a man. It was then discovered that the enemy numbered only some dozen men. If this mosque had been tiled its capture would have been a more difficult matter.

While the encounter described above was in progress, a message was received at Bn. H. Q. which was with the centre com-

pany, that the company on the left had been held up at the Cheruvada mosque and that one officer and six men had been killed.

The C. O. sent one platoon to assist.

Several attempts had been made to rush the mosque, which also appeared to be strongly held. The enemy had cleared the bush round the building for a distance of about 150 yards, thus creating a good field of fire.

Whenever the troops attempted to get within bombing range they suffered casualties. Stokes Mortars were not issued to Indian troops. The Pack Battery was not out on the drive during this stage, and in any case could not have been got up through the thick bush. Rifle grenades did no damage to the building, the roof of which was tiled. Eventually heavy fire was directed on to all doors and windows, under cover of which a party under a N.-C. O. climbed up to an upper window, and threw bombs into the building. This party eventually forced themselves into the building and descended the stairs. While the attention of the enemy was thus attracted inside the building another party forced an entrance from the outside. Once the troops got into the mosque the matter was soon ended. 56 Moplahs were killed inside. Our losses were one G. O. and six men killed and two B. Os. and ten men wounded.

These casualties for this kind of affair are heavy. The Pack Artillery was intended to deal with such cases, but it could not move off roads and never came into action during the drive. It is suggested that the Stokes Mortar would have solved the problem, as it did in the case of the Leinsters on the 26th August. In any case it would have to be carried by porters in jungle country, or it would never be up when required.

On the 14th November, while the "drive" was in progress, the rebels, numbering some 2,000 men, attacked the post at Pandikkad, which was held by one company.

The post was located in a market place, which consisted of a rectangular enclosure surrounded by a mud wall. The perimeter was really too large for the garrison, but had a Machine Gun at each corner. No obstacle had been built round the post. The enemy intended to attack all four faces at once, but, in the excitement of the moment and the dim light of early dawn, only two faces were assaulted. The attack was carried out with the greatest determination and the whole of one wall was pushed

over by the weight of the attack, which went on for some 15 minutes. The enemy even penetrated into the post, but were driven out by a platoon from the South face which was not attacked. The enemy lost 67 killed inside the post and 170 outside. The troops lost one B.O. and eight men killed and two G. Os. and 27 men wounded.

This attack showed that the Moplah is capable of organized offensive action and there should have been an obstacle round the post. Moreover a platoon was detailed to each face of the perimeter, thus there was no reserve.

5. After the "drive" the country was divided up into five areas, one to each battalion in the force.

The companies of the Auxiliary Police were left to deal with the country to the north of the Beypore River.

Area commanders were ordered to act with the greatest energy against any rebel gangs in their area. In order to ensure mobility each area was allotted sufficient pack and porter transport to enable columns to remain away from H. Q. for several days at a time.

There is not space in this paper to discuss the operations involved. But with an efficient police force which now existed and a sound system of intelligence, information was good. The rebels themselves began to be ambushed. Those still in the hills were starved into submission. By January 1922 the situation was well in hand and most of the rebels had surrendered.

The total battle casualties suffered by the troops were 43 killed and 126 wounded. The rebels are known to have had 2,400 killed alone.

6. There are a number of lessons which can be learnt from these operations; it is proposed to discuss the more important of them.

(a) When troops are called out in aid of the civil power to quell a widespread rising, the force detailed requires careful consideration. There will probably be two phases—

(1) When a small force will suffice to back up the police.

(2) When the outbreak has gone beyond phase (1) and the suppression becomes a military operation.

In (2) the force employed must admit of posts being established in important centres and of adequate numbers being available for Mov. Columns.

It is important not to under-estimate the numbers required as that tends to increase the probabilities of the rebellion spreading. There is one factor which must be considered in asking for re-inforcements, that is the time required for these to arrive. A mis-calculation of this period was the cause of the rebellion spreading north of the Beypore River in October.

As to the employment of the troops on arrival, there are two possible methods. The area system and the drive system.

Neither are new. Both were employed by Hoche in La Vendee in 1793: also by us on a larger scale during the pacification of Burma in 1886. Which of the two to employ depends on the country, characteristics of the enemy and the number of troops available.

The drive was employed in the latter stages of the South African war, where 50 miles were covered in the day and was carried out entirely by Cavalry. In the Punjab, in 1919, the area system was employed. In 1923, when rounding up Babbar Akalis in the Hoshiarpore district, the drive system was employed. A combination of both systems is often necessary. A larger force is required for the drive system, if the country is to be well covered. "Get-aways" encircling the area to be driven will have to be blocked. In Malabar the area was restricted by natural obstacles: the River Ponnani on the South, the Nilgiris to the East and the sea to the West.

The essence of both systems is the offensive action of mobile forces, not tied to their posts, or too weak to move about freely.

(b) Formations have been dealt with; the figures shown in the appendix show the development of the formation found to be most suitable, which was, after all, the normal formation as laid down in the manuals, with a few modifications rendered necessary by the country. A few small points in regard to the tactics adopted during the "drive" are detailed in Appendix "B."

(c) Intelligence and police.

All troops brought into a country like Malabar are greatly handicapped. Every body of troops needed a policeman or other official who could speak English or Hindustani and Malayalam. To provide these any police force needs expansion. But in Malabar, when the troops first arrived the police had ceased to exist. So the troops suffered from a complete lack of intelligence which made the initial operations a failure. It was not till the police organization had been re-established that the troops received reliable information and could make suitable plans.

The system of intelligence in the Malabar Force was based on that which existed in Malabar under peace conditions.

It was the normal police system, put under the control of the military under martial law.

During the opening stage of the rebellion, when troops were few and had not the upper hand, information was difficult to obtain for the following reasons:—

- (1) The Hindus were too frightened to bring news for well founded fears of reprisals.
- (2) So-called "loyal" Moplahs were not disposed to bring in information.
- (3) All our movements were known by the rebels through the agency of the "loyal" Moplahs and the wives of the rebels themselves. These latter were a constant cause of annoyance in this direction.

During the latter stages of the rebellion, when the situation was well in hand, information came in more readily. In addition, the police had been re-organized and were well in touch with the country-side.

The organization of intelligence was as under:—

With Force H. Q. was the local D. S. P., who was Force I.O. He was also O. C. Civil Police, and thus acted in a dual capacity.

The country was divided up into areas, under Bn. Commanders. Each Area Commander had a British Officer, for intelligence: a Police Officer or a Planter, whose estates had been destroyed, and one Indian Police Officer.

There were several posts in each area in which were located a Police Superintendent with a small party of civil police. The Policeman was the Post Intelligence Officer. Posts dealt with areas and areas with Force H. Q. This system worked smoothly and efficiently.

The Auxiliary Police were not used for Intelligence. When trained they were put under Force H. Q. and used in the same manner as regular troops. Sometimes they were under the Battalion Commander of an area: at other times they were given an area of their own. Owing to their local knowledge of the country and language they were in a position to obtain their own information. The D. S. P. was their immediate C. O. The intention was to enable them to gradually take over the country from the Military when martial law was withdrawn.

The duties of the civil police at each post were twofold.

- (1) To act as intelligence personnel.
- (2) To act as police personnel and carry out their normal police duties, such as escorts for prisoners.

Hence from top to bottom the police were acting in a dual rôle.

Intelligence took the form of Police Reports rather than Military Intelligence. This was checked and disseminated by Force H.Q.

Any attempt to set up a purely military form of intelligence organization could not possibly be as efficient as a civil organization in this form of operation.

- (d) Something has already been said about the delay in making the powers under martial law really effective. Notwithstanding the institution of the various courts, at the end of the rebellion there were hundreds of cases awaiting trial on serious charges. Also numerous arrests to be made on complaints put forward by Hindus. These could not be carried out owing to the congestion. Thus the speedy return to normal conditions in the district was retarded. To remedy these defects it is essential that courts be instituted with the first martial law ordinance capable of trying all offences and having the power to award the maximum sentence. It was not till the

first sentences by Military Courts were put into execution that the population realized that the Government was in earnest.

(e) Finally the extreme difficulty experienced by infantry having to cope with defended buildings without artillery, mortars or some other auxiliary weapon.

F. S. R. 2 (142/1) dealing with jungle warfare, states "Frontal attacks against modern weapons are very costly, as it is almost impossible to give attacking infantry close artillery support owing to the trees. At the same time, where frontal attacks are necessary, every effort must be made to support the infantry with pack artillery or mortars."

The Pack Artillery Battery in Malabar could seldom be used. It was sent back to its peace station after the drive. The nature of the country gave no opportunities for its use

F. S. R. 2 (135/1) speaks of "carrier batteries" in jungle warfare. But owing to the close range at which all actions were fought and the impossibility of seeing any centres of resistance from a distance owing to trees, it is not considered that even carrier artillery would have been of any value. F. S. R. recognises that mortars will be required in the jungle, and they appear to be the only solution. But even they will have to be carried by porters in this form of warfare, as mules are merely an impediment and are not sufficiently mobile. There is no doubt that mortars would have saved a large number of casualties.

APPENDIX "A".

The dispositions of the Malabar Force on 7th October 1921.

| | | | |
|-------------|-----|-----------------------------|---------------------------|
| Calicut... | ... | 3 Platoons 1 Leinster Regt. | |
| Tirur ... | ... | Force H.Q. and Railhead. | |
| | | 1 Sec. Armoured Car Coy. | |
| Ed ... | ... | 2 Platoons 83 W. L. I. | |
| Eddakkular: | ... | 1 Platoon 83 W. L. I. | |
| Mallupuram | .. | H.Q. 2 Dorset Regt. | } Includes a Mov. Col. |
| | | 3 Platoons 2 Dorset Regt. | |
| | | 2 Sections 83 W. L. I. | |

| | | | | |
|--------------------|-----|--|-----|--|
| Manjeri | ... | 3 Platoons 2 Dorset Regt. 1 Platoon 64 Pioneers. 1 Sub-section 69 F. Bty. R. A. | } | Includes a Mov. Col. |
| Edavanna | ... | 3 Platoons 2 Dorset Regt. 1 Platoon 64 Pioneers. 1 Section S. and M. | | |
| Nilambur | ... | 2 Platoons 1 Leinster Regt. | | |
| Wandur | ... | 1 Platoon 2 Dorset Regt. | | |
| Pandikkad | ... | 1 Platoon 2 Dorset Regt. 1 Platoon 64 Pioneers. | | |
| Perintalmanna | ... | 1 Company 2 Dorset Regt. M. G. Platoon 2 Dorset Regt. 1 Sub-sec. 69 F. Bty. R. A. 1½ Platoons 83 W. L. I. | } | Includes a Mov. Col. |
| Mannarakkat | ... | 1 Company 1 Suffolk Regt. 1 Section S. and M. | | |
| Otapara (Hill 869) | | Central Signalling Station. 1 Platoon 2 Dorset Regt. | | |
| Total Strength. | ... | 2-18 pdr. guns. 2 Dorset Regt... 1 Coy. 1 Suffolk Regt. 5 Platoons 1 Leinster Regt. 6 Platoons 83 W. L. I. | | 800 rifles. 170 rifles. 200 rifles. 200 rifles. |
| | | Total | ... | 1,370 rifles. |
| | | 3 Platoons Pioneers. 2 Sections S. and M. 1 Section Armoured Cars. | | |

APPENDIX "B."

1. *Formation.*—On the march on a path or road, *vide* Fig. 2 Troops in fours or file, dependent on the length of transport, which requires all round protection. Leading and rear sections of fours across the road. Column well closed up, no gaps between Van and Main Guard: Connecting files dangerous, small parties liable to be rushed by swordsmen. Outer files slope arms, inner files sling arms, change every hour. When column halts one section per platoon put out as piquets. Alternative formation for the Van Guard is shown in Fig. 3. This formation is usually used by the Assam Military police.

2. *Movement across country.*—Usually companies with three platoons up and one with Coy. H.Q. in support. Platoons in diamond or square formation. Sections in file. Frontages and distances according to the bush.

3. *Section searching a small house.*—

Two Bayonet men facing inwards near the door.

Two Bayonet men facing outwards.

Axeman breaks in the door.

Bomber and two Bayonet men then enter the house.

4. *Platoon striking a group of houses.*—

No. 1 Section halts in front.

No. 2 Section envelops right flank.

No. 3 Section envelops left flank.

No. 4 Section acts as reserve and halts in rear of No. 1.

The method of entry is then as in para. 3 above.

5. *Attack on a large house or group of houses*—The action is the same as in 4 above, but for sections read platoons.

The rear of the objective should not be enveloped, as fire will be masked. (The rear of the buildings must be covered by fire.) If no loop-hole of escape is given to the defenders our casualties will be the heavier.

The converging moment of flank platoons must be simultaneous.

No. 1 Section of each platoon details men to act as in para. 3 above, grenades are then thrown through the doors or windows. Remainder of platoon waits under cover to receive sally, L. G. kept trained on the door.

No. 2 Section of each platoon detailed to watch all doors and windows on its front.

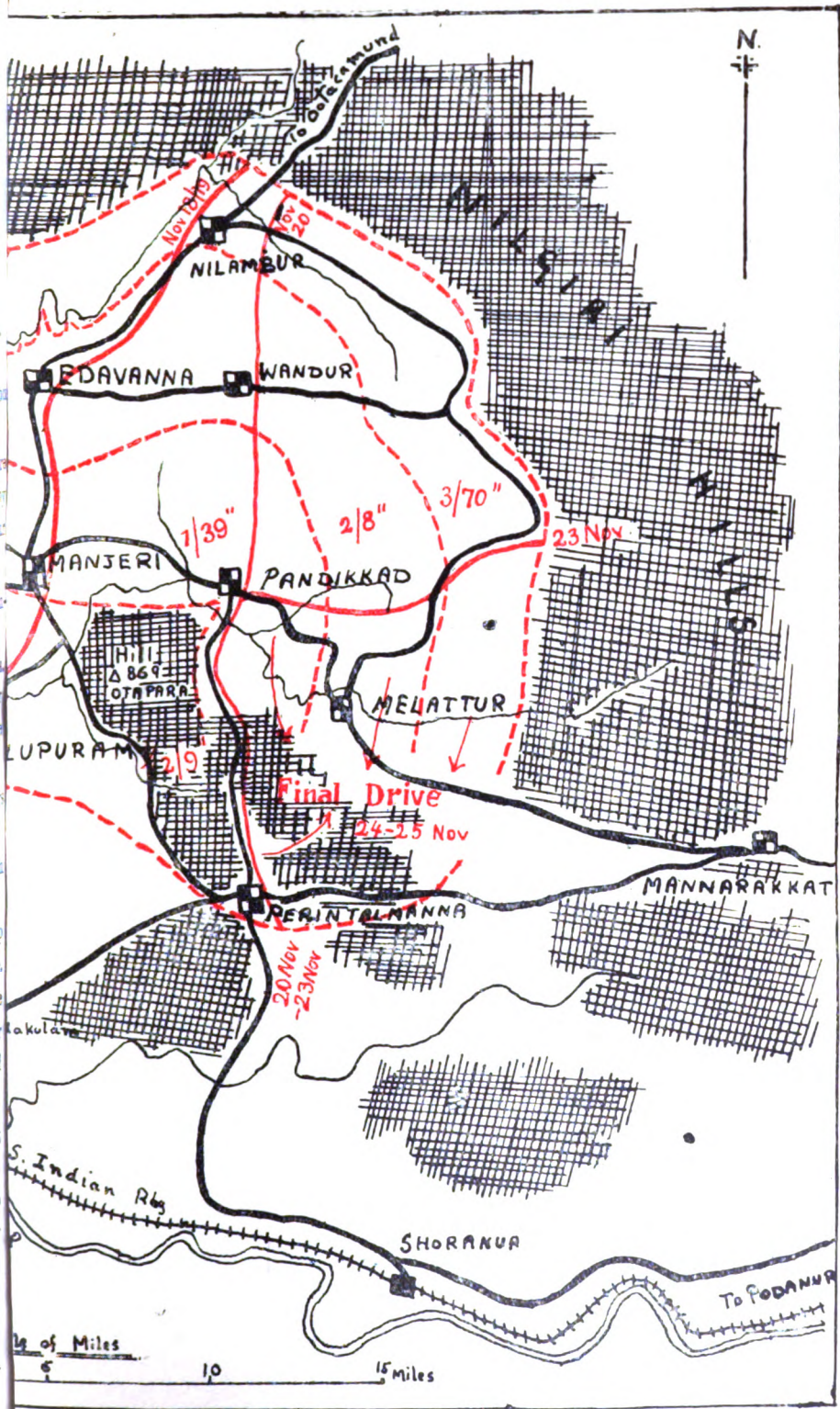
No. 3 Section are kept for bayonet work and No. 4 Section for L. G. work.

If no sally is made, men must get on to the roof and drop grenades through. If thatched it can be set on fire. It usually happened that if no sally was made, the house or houses had to be rushed and an entry forced. Most of our casualties occurred in this manner. Too great a delay to send for a pack gun. Stokes Mortar indicated.

6. *Night Formations.*—Reconnaissances were carried out in single file. Scouts and Flankers were not used. Too slow. Night operations were hardly ever used: success difficult to attain owing to populated nature of the district. After the "drive" were used in order to surround gangs who had been located in the evening. Strength usually a platoon, with Aux. Police guides.

7. For all bush work troops should be armed with the kukri or 'dah.' Some sort of cutting instrument necessary.

OF MALABAR.



RAILWAY ORGANISATION FOR THE INDIAN ARMY.

By Major H. L. Woodhouse, M.C., R.E.

Object.—In the “Life of Lord Wolseley” by Maurice and Arthur recently published, there occurs an extract from a letter written by Lord Wolseley during the Tel-le-Kabir Campaign (page 153).

“The next time I come on any expedition I shall insist upon having a full staff of engine drivers, traffic managers, etc. The R. E. are most willing and anxious, but railway management is a trade in itself; it cannot be learnt in a day, and special knowledge will not serve as a substitute for it.”

Lord Wolseley's force was about the size of a modern division and though he had ample supplies at his base on the Suez Canal, and a railway line running out through his advanced posts, the latter were short of food. With the experience of recent years to draw upon, it is hardly necessary to emphasise the part played by railways in the communications of a modern army.

Origin.—The first steps towards organising railway troops for the Indian Army were taken in 1902, after the lack of any such troops in the 1900 China Campaign had been found to be a serious handicap. A company of Railway Sappers and Miners was raised in that year, and another in 1906.

These companies each consisted of a regular company of engineers and a reserve of transportation men, the latter being non-combatants, nominally 400, actually 280 strong for both companies. The organisation was never completed, but in 1914 a complete railway corps was built up for the East African Expeditionary Force, with these companies as its nucleus. On the whole this organisation was very successful. The following suggestions are based mainly on experience in East Africa and Palestine.

Home Organisation.—In England Railway Companies R. E. were formed after the Tel-el-Kabir Campaign. They are essentially reservist in composition relying on the large numbers of men available on home railways for expansion in case of war. The problem is different in India, in that the classes from whom

Indian Railway employes are drawn in many cases devoid of military tradition or aptitude, whereas there is no such class distinction in England.

Present Organisation.—At present there is no definite set of regulations covering the formation and organisation of a military railway corps for the Indian Army. Two companies of platelayers are borne on the strength of the Royal Bombay Sappers and Miners. These are the descendants of the Railway Companies S. and M. who went to East Africa in 1914, but considerable expansion would be required, before they could undertake to operate a railway.

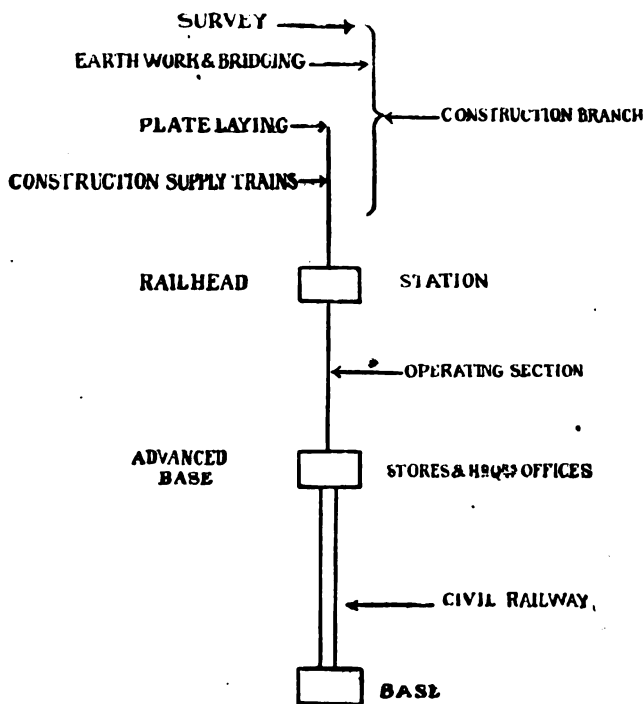
No doubt the Indian Railway would do all in their power to assist in case of war, but the Indian Army may be employed elsewhere than on the North-West Frontier; and in any case the raising, equipping and organisation of any body of troops can be carried out much more easily if the details have been thought over at leisure. Incidentally too, there is apt to be continual trouble with Audit, Supply and Ordnance if there are no regulations to which they can turn. The Railway Battalion Sappers and Miners of 1916—1921 was continually being refused recognition as a battalion, because it was Sappers and Miners, and as Sappers and Miners because it was a battalion and not a corps.

Functions of organisation.—There are two separate and distinct functions of a military railway corps. The first is to build a line; the second to use it.

Under the supreme control of the Director of Railways, there should be two principal officers, one in charge of construction or building the line, and one of operation or using it when built. The best dividing line is the most advanced station open to traffic. In front of this are, the survey, earthwork, bridging and platelaying, detachments with possibly water supply and building parties.

Trains loaded with material for construction are handed over at this station, and it will probably be found best to have a separate staff for working them forward. Behind this station an officer corresponding to a Railway Divisional Superintendent will be in charge back to the advanced base. He will have a transportation section of guards, drivers, station masters, etc., an engineering section to maintain and improve the line and a stores section who will arrange for all material. At the advanced base will be the accounts and headquarters offices.

Diagrammatically the organisation may be shown thus:



Telegraphs.—The erection and maintenance of the necessary telegraph installation will best be done by a special section of the Indian Telegraph Department. They are specialists at the work, and maintain railway telegraphs in peace time. The Royal Corps of Signals are not likely to have either time or men to spare for this work, and in any case their use would violate the principle of making the most of civil organisations where they are suitable.

Source of personnel.—The question now arises how best to arrange for the personnel required. Railway location is an expert's business. There are always officers and men employed by civil railways on this job, who would be available for a military railway, so there is no object in making any special arrangements for them in peace.

Pioneers will presumably be available for earthwork, with or without the assistance of local labour.

Platelaying and heavy bridging is a sapper job, which is best done by specialist sapper companies. Field companies of sappers will probably have as much work of their own as they can do, without being called on to help the Railway Corps, though

their trained mistries would be of considerable assistance in bridging.

Water-supply again is a specialist job. It would probably be done best by a specialist gang from some railway.

Behind railhead station, the operating staff should be drawn from men already trained and in practice. There should be a nucleus of these on a reservist basis, on which to build up the full organisation required, not forgetting a workshop contingent.

The Stores Officer should be drawn from Indian railways, preferably an engineer, as there will be a good deal of technical engineer material to handle. He should have assistance from a mechanical officer, for dealing with mechanical stores.

Engineering work behind the railhead station can be left to special labour corps officered by railway engineers. Time is not of such paramount importance here as it is in front, and urgent work can generally be met by increasing the strength of these corps. They will be much further from the front line, and will have plenty of room in which to use a large number of men, whereas there is a limit to the number of men who can be employed efficiently on platelaying at railhead.

In East Africa a very efficient labour corps was formed from the "bhais" of the sappers. Many of these were enlisted later on in the companies and others became firemen, and semi-skilled transportation labourers of other categories.

Construction personnel.—Normally the engineer construction parties will be well up towards the fighting front and liable to be mixed up in skirmishes and raids. Cases to the contrary may occur such as happened with the continuous trench line of France or the construction of railways long after the enemy had been thrust back as in Mesopotamia, but generally speaking the construction parties should have a combatant nucleus, sufficiently strong to look after themselves in case of trouble. (This ability does not alter the fact that the allotment of some few infantry men to act as outposts to railhead when they can be spared, will help matters, as it will enable the full strength of trained men to be employed on technical duties unless seriously attacked.)

From these considerations, it is evident that the regular nucleus already mentioned should be engineer troops, who should be combatants. Even if they never have to use their rifles (in Africa they had several skirmishes) experience shows that their military training will be a considerable aid to their technical efficiency.

A further consideration in favour of this proposal, is that rapid platelaying (and speed is the first requisite of military railway building), involves exceedingly heavy physical labour. The type of man employed on the ordinary civil railway construction would not last long in a railway sapper company working at full pressure. During the later stages of the East African Campaign a newly raised railway company of inferior class simply melted away into hospital when called on to do the same work as the older companies. To get the requisite physique, men of good class must be enlisted, and these will not readily join a non-combatant corps.

Organisation of construction personnel.—Assuming now that the nucleus is to be of engineer troops, the next consideration is their best formation. For rapid platelaying two units are required, which on alternate days lay the line, and pack it up level and fit for traffic. This points to a corps of two companies strength.

A platelaying unit is built up on the rail carrying squad of eight men. For each rail carrying squad about thirty to forty men are employed on spiking, bolting, straightening and sleeper carrying. The exact allocation depends on the length of the rails used and the weight of a sleeper. In East Africa and Palestine after allowing for guards, employed men and sick, it was found that for four rail carrying parties and their helpers laying about a mile a day a total strength of about 210 was desirable, this strength including fifteen "mistries" i.e., carpenters, smiths, masons and painters. Two or three officers and two B.N.C.Os. were included with three Indian Officers. It is not proposed to go into further details as to strength, which will be dependent on many considerations, beyond remarking that this strength of three B.Os., two B.N.C.Os., three I.Os., 213 I.O.Rs., 20 followers per company was found to be satisfactory in the later stages of the East African Campaign.

Training in Peace of Regular Troops.—The efficiency of the platelaying units depends on practice. This can only be obtained by their employment on actual construction work, and in close touch with railways in peace time. There is only a limited amount of platelaying to be done on the construction of new lines, but hundreds of miles of renewals of rails and sleepers are done every year, which is the next best thing. In the slack season for construction and renewals, military training and leave will occupy part of the time and the rest should be spent on maintenance, which will contribute something to keep down

expenses to the Army Department. Maintenance is not in itself a very desirable occupation for sappers, but a trained man must know all about it as apart from the first packing up of the newly laid line the usual method of maintenance in the early stages of a new line is by gangs either of local inhabitants or imported labour corps supervised by sappers who for some reason are not fit for full work with their companies.

Operating Branch.—We now come to the operating branch. It will be seen that except in the very unusual event of a railway being taken over undamaged by miners' staff, there will be a definite lapse of time before very much will be required of the operating branch. This is as well, as it permits of it being entirely reservist. Engine driving is an art which can only be learnt and kept up by constant practice. There can be no point in keeping an engine driver with the colours, when he can be retained as a reservist for a small fee and meantime be practising his trade daily at the expense of his employer. The class of men employed in the Rolling Stock branch of the N.-W. R. are sturdy fellows, quite ready to join a reserve for a few rupees a month. The terms of enlistment would be the same as those of the pre-war loco and traffic reserve of the railway company's sappers and miners. The same applies to the transportation staff. Though the Army as such has no great attraction for the babu class who work as station masters, guards, telegraphists etc., they are quite ready to join a reserve, provided they are assured that their duties will be those they perform everyday in civil life.

It may be asked why enlist a reserve at all. The reply is expense. Once a war starts prices rise, and volunteers demand a good deal more pay, than reservists get. Also it saves a lot of time and trouble on mobilisation to have all document etc., already prepared.

A further point is that volunteers are much more likely to come forward, if some of their friends and relations are already with the expeditionary force and they hear from them of their welfare. In the early days in East Africa the reservist transportation staff were thoroughly happy, as they explained that they were well fed and clothed, and there were no babus to demand backshish when they got their pay.

In addition to the transportation reserve there should be small workshop reserve enlisted on the same principles, including carriage examining staff.

A point which must not be forgotten is that these reservists are not followers and must not be clothed as such. There was a great deal of unnecessary trouble in mobilising in 1914 owing to these men, who are usually of a well educated class being treated as followers, for clothing purposes. They resented this.

A difficult point is that of rank. In 1914 station masters were given the relative rank of jemadar. In practice they wore their N.-W. R. badge of station master and no military badge of rank. This was found to be a satisfactory solution. Whatever their army rank it should not be above company havildar major or havildar-major.

The pre-war reserve of the 25th Company drawn from N.-W. R. and O & R. R. was 200 strong, of the 26th Company from E. I. R., G. I. P. R. and B. B. C. I. R. only 80. The difference was no doubt partly due to the presence of the regular companies on the N.-W. R. but the more sturdy north countrymen, lasted better than the down countrymen.

Officers.—The officers for the additional construction staff, and for the operating and workshop staff should be drawn from the civil railway officers. Many of these are already reservists and the question of rank can best be met by giving suitable acting rank, varying with their railway duties.

Second Line Reserve.—In addition to or in lieu of this reservist organisation, some sort of reserve formation might profitably be formed on the State Railways in peace on much the same conditions but attached to the Railway—A. F. I. battalions. This would include European and Anglo-Indian subordinate staff, who are needed to stiffen the Indian personnel, as they do on civil railways. Sanction was actually received in 1914 to enlist some European reservists for the 25th and 26th Companies, but the outbreak of war prevented further steps being taken.

Second Line Reserve.—The whole organisation in peace will depend on the regular engineer units, and the railway auxiliary force regiment. It will probably be best to organise the transportation reserve in companies, with separate numbers, the O. C. engineer companies acting as O. C. these companies in peace time. On being called up, the transportation officers for the expeditionary force would become officers of these companies.

Depot.—Experience shows that it is essential to have a depot organisation ready to start functioning from the outset,

The clerical staff will be drawn from the regular units at first, to be replaced by temporary men later, but it is most important that there should be a regular organisation authorised. This for the sapper companies will preferably be obtained by making them part of one of the present corps of S. and M. For the transportation reserve some sort of skeleton organisation should be worked out depending on the railways themselves or the railway A. F. I. units.

Summary.—These suggestions summarised, propose two regular companies of Railway Sappers and Miners, complete with a depot or attached to an existing corps of S. and M. Based on them or Ry. A. F. I. units a company say 200 strong of transportation reservists including station masters, signallers, pointsmen, engine drivers, firemen and carriage examiners; and a workshop company say 100 strong, including some men accustomed to deal with technical stores, both with a few Europeans. Officers for these two reserve companies, for survey and any other duties required, would be drawn from Indian railways. Such an organisation could be expanded to any required size with far less trouble than an entirely improvised organisation would require, and its peace-time cost would be limited to that of the two regular companies less the value of work done by them for the civil railways, plus a small amount in reserve pay.

THE OBJECTS OF THE MASTER-GENERAL OF SUPPLY BRANCH IN PEACE AND WAR—I.

By Colonel on the Staff, G. C. Sturrock, F.I.C., A.I.E.

Recently an American Secretary of War was trying to put into popular language some of the lessons the American General Staff have deduced from the Great War. The following extract from his speech is pertinent.

"To-day even the genius of a Napoleon would be of no avail unless there were ships, and rail roads, and motor trucks to keep a constant stream of munitions moving from the factories to the front. The expenditure of supplies in a modern battle is enormous, and plans for war must extend not only back to the factories, but beyond that to the raw material without which the factories would stop."

To a soldier the phrase "lines of communications" has a fairly definite meaning, but ordinarily we only consider that the army has to give these protection as far as the base from which supplies are drawn by the Quarter-Master General for issue to the troops. The steadily increasing complexity of weapons has now reached a pitch which compels the study of communications far beyond this. For example a really complete study of the small arm cartridge involves the study of the geography of the greater part of the civilised world; particularly when the possible alternative sources of supply are investigated.

In addition to this the principles of rapid mobilisation, and the necessity for this being complete, and possible without an undue strain on the financial resources of the country in peace have gradually been compelling the General Staffs of the combined forces of all countries to study the lines of communication by which the army bases of supply are fed, to verify that they are covered against enemy action as far as possible and to see that they can be kept open continuously in war.

In one sense there is nothing new in the principle. Old laws existed for the enforcement of the growth of yew trees for making bows, for the planting of oaks to ensure the possibilities of ship building, and so on. These are neither more nor less

than early recognitions of the difficulties which caused the formation of the Ministry of Munitions in the Great War, the development of one side of the Master-General of the Ordnance's activities in England, the formation of the English Cabinet Committee of Defence and its ramifications, and which have now in India culminated in the formation of the Master-General of Supply Branch, Army Headquarters.

The recognition that we must develop and guard these lines of communications, or find means of ensuring they are free from enemy action crops up fairly early in English history, although in those days matters did not develop rapidly. There is a record that in 1314 we imported guns and gunpowder from Flanders for our campaigns in France; although cannon were mounted in English ships of war in 1338, and gunpowder was supplied to the King in 1348, these were apparently still imported. It is not till 1447 that we can find a definite statement that we were making gun powder in England. In that year the Master of the Ordnance reports that 20 tons of gun powder have been made.

Up to the time of Queen Elizabeth and even later, little more was required than requisitions on the country at large for ordinary civil stores to enable military requirements to be met. In those days all ordinary sea trading involved the carrying of fairly heavy defensive armaments against pirates, and in consequence civil and military stores largely overlapped. Moreover manufacture of munition was relatively simpler and the normal education of the higher soldier ranks included the principles of making them to an extent which ensured the improvisation of manufacture in emergencies, wherever material could be found.

A famous example of such improvisation occurred in the invasion of Mexico, when the supplies of gunpowder with Cortes ran short (circa 1519 A.D.).

Cortes sent an expedition under Francisco Montana up Popocatepetl; this officer was lowered into the crater and dug up sufficient sulphur to meet the needs of the army, and manufacture of powder was immediately carried through. It is true that in his despatches Cortes expresses his opinion, somewhat ingenuously, that "on the whole it would be less inconvenient to import ready made powder."

From 1600 onwards the increasing specialisation began to be recognised, and more definite arrangements for securing supplies of raw materials are developed. In all countries charters were

granted to merchant adventurers, under many names, and in the majority of such charters a clause will be found, if searched for, specifying that one of the objects of the charter is to ensure supplies of some ultimate war material. The commonest article specified is saltpetre, but hard woods for ship rigging are nearly as common. Town charters, land tenures, and patents, contain not merely clauses for the provision of so many trained men (early developements of the A. G.'s. Branch), for the issue of so much military supplies (early developements of the Q. M. G.'s. Branch) but also clauses compelling the maintenance of so many forges, powder mills, working of mines, etc. (early developements of the M. G. S. Branch).

This tendency has steadily developed throughout history. The first big historical example of the General Staff, of a country taking an active part in freeing these back lines of communication from enemy action occurred about the time of the French Revolution. The initial demand was for common soda. Although it is hard to see the definite military connection of this store, yet it was under military auspices that large money prizes were offered for the production of this material in France without importation. Later on the naval supremacy of England prevented any importation of saltpetre; Napoleon himself took the matter up, and organised a new department of the army, that of "Pondres et Saltpetrieres" to devise supply independent of sea transport. Incidentally these two investigations have had very far reaching effects on the history of English trade. A considerable part of the English heavy chemical trade developed initially from inventions that were put forward with a view to winning the large money prizes offered. This department has subsequently had a great effect on the developement of smokeless powders and high explosives.

Recently a curious example of the way history repeats itself has occurred. After the Russian revolution there is quite definite evidence that Tortskey has realised the existence of the same difficulties and has formed a department of the Red Army to develop supplies, which can be made entirely in Russia, both of explosives and poison gases. It is possible that this department may have as great an effect on future developments of munitions as did the French department. It must be remembered that Russia is not bound by conventions and agreements barring certain lines of development.

About the same time, 1780—1800, some developments occurred in India. In that period Colonel Pearse of the Bengal

Artillery, who appears to have combined appointments equivalent to the Engineer-in-Chief and the M. G. R. A. impressed upon the authorities the deplorable state into which the guns and gun-carriages of the army had been allowed to get. He pointed out the complete failure of importation, and the risks of capture or destruction by enemy action entailed thereby. Under his auspices contract agencies for supply of war material were initiated, which developed within 25 years into the beginnings of the Indian Ordnance Factories. These institutions were definitely founded to avoid the risks of importation, and ever since have been more or less continuously endeavouring to use local materials only.

From that time onwards all Governments have definitely followed the policy of either developing their own munition factories or of encouraging the so-called armament firms, or of a combination of the two policies.

In England only has the matter been somewhat obscured. We have always held, or what was equivalent, believed we held, practically undisputed command of the sea. Moreover, England has been the world's market for the transport, and exchange of goods, and we held with considerable correctness that in war time we could procure from this market all war requirements. However in England also the policy had been more or less studied. The Master-General of the Ordnance Branch at the War Office had been developed, and reserve stocks of certain materials had been accumulated before 1914. Even so it rapidly became obvious that many things had been overlooked; and these definitely affected some of the operations of the war.

Naturally in giving examples I am stressing particular aspects of the matter, and far more complex questions were involved.

The defence of the Suez Canal was a necessity, for without it the Australian wool crops could not have reached England, and the clothing of the Army in France would have been difficult, if not impossible.

The ensuring of a provision of oil fuel for the Navy was the fundamental cause of our operations in Mesopotamia.

The battle of Falkland Islands was a supply necessity, as unless it had been fought and won, supply of Chile saltpetre would have been almost impracticable, and we had not developed any alternative basic raw material for our explosive supply.

Examples of the necessity of keeping our lines of raw materials supply free from enemy action both direct and indirect were numerous in the Great War.

In India, up to 1914, there existed no cleaning plant for preparing cotton waste for the manufacture of cordite. The plant had been ordered and was under erection but was not available until December 1914. Cleaned cotton waste was supplied from England, but the immense demand for shipping delayed export, and in consequence for about a week in October, 1914, all manufacture of cordite in India stopped for lack of material. This was a very trivial failure.

The amount of discussion that took place in the papers regarding the effectiveness or otherwise of the blockade of Germany in preventing supplies of cotton, at any rate drew attention to the fact that at least one raw material essential to Germany was more or less exposed to our attack. In this case chemists did not attach too much importance to the matter, for the supply of propellants only was effected, and we knew the extent to which the research work had previously made substitutes possible, so long as only a short life was required.

A classic case occurred in England, over the supply of acetone. This is a material which is essential for the manufacture of cordite and cordite M. D. which was the form of propellant we had adopted. Up to 1914, India had actually purchased the whole of its requirements from Germany and Austria. England had also largely depended on these sources, though there were a few small factories in the United Kingdom and some large ones in Canada and the United States. England used to carry reserves of this material, but shortage of supply immediately began to be felt, and action had to be taken by the equivalent of the M. G. S. Branch in England. This supply was one of the causes that checked initial expansion of feed of finished ammunition. The action taken was fourfold. All expenditure of acetone on ordinary civil requirements was prohibited and import from America was pushed as much as possible. Firstly the existing factories, Waltham Abbey and various private firms in England, Government factories in India and Australia, were kept supplied with the minimum they needed, and recovery plants were inspected and kept at high efficiency. Secondly America had developed a powder not using acetone, we adopted this to our guns and developed very large supplies from America. This was the N. C. T. Powder. Thirdly a new variety of cordite not using acetone was invented,

and the machinery for making it devised, and manufactured. Large plants for making this were created in England, *e.g.* Gretna Green Factory. This was the R. D. B. Powder. Fourthly a completely new process for making acetone from entirely different material was devised and put into application.

It was not until these four lines of action were in full swing that the army in France was really adequately supplied with ammunition.

These exemplify one of the objectives of the M. G. S. Branch in war, *viz.*, the ensuring of production of Army requirements in such a way as to avoid any possibility of check by enemy action, direct or indirect. The recognition of this duty is shown fairly well by two diagrams. The first shows the way supply of ammunition was envisaged up to 1914, after the findings of the Mowatt Reserve Committee. Supply is only considered as far back as the final issuing factory. Reserves for use are shown in different stages in the lines of communication. The size of each reserve is fixed by the difficulty or otherwise of filling it up after expenditure.

The second shows in an excessively diagrammatic way how the supply of ammunition is now envisaged. The M. G. S. Branch has to study all the new points in view and see that continuous flow is possible, and that reserves of materials or partially made goods exist or are procurable at each and all of the stages.

The study of this enlarged view, and of the communications involved thereby, submarine action, possibilities of air attack, and the war lessons, have emphasised the necessity of developing immunity from enemy action on these lines of communication.

I now draw attention to the lines of sea communication at present involved in the supply of three items of army requirements in India, namely the army great coat, the 18-pr. guns, and the cap for small arm ammunition.

The army great coat is made initially from Australian wool, which is shipped home to England and worked up into "Cloth, drab mixture, great coat." This cloth is shipped out again and made into great coats at Shahjahanpur and Madras. You will note the dependence of these lines on the important strategic points where we have fortified ports, and yet how a large portion is open to attack from possible enemies, and the mere length of the lines involves ship tonnage to a fairly large extent. A study

of the possibilities of shortening these lines by making the cloth in India is in hand, and Government has given a grant of money for the purpose. Further although Indian wool, is insufficient in quantity and poor in quality, a study of possible alternatives is being made to meet the contingency of a temporary cutting of the lines Australia-India.

For the 18-pr. gun, which we make out here, we are dependent on supplies of special iron ores which come *via* England from either Scandinavia or America, and on supplies of gun wire and magnesite bricks from England. Before 1914 the number of items was very much greater, but indigenous supplies have already been developed. We see no prospect of being able to avoid supplies of gun wire, but the shipping involved in this is small. A good deal of work has been done on the other two items and possibilities of local supply depend almost entirely on development of Indian trade.

For the cap we depend on supplies of copper and zinc from Australia, mercury from Spain or America *via* England, for sulphur from Sicily, England, or Japan, and for nitrates from Chile. Certain alternative lines of supply exist and are being studied.

The detail study of these lines of communication from the purely military (or fighting services) point of view is comparatively new. It is essentially a study of the possible trade movement of the time, and the application of them to military requirements. The results are interesting and curious, and often show unexpected results; cheapness of supply, and perfection of qualities in a material used, become, quite clearly, not the only criteria to judge by. We may have to pay more in hard cash, or accept in peace an article less perfect than one desires, to ensure a continuous and rapid supply in war. This is put into most admirable language in an article in the "R. E. Journal," December 24th; which I quote.

"The most important point as regards production is that every part of the munition can be made as far as possible by mass production. Semi-skilled labour is the order of the day in war and semi-skilled labour means mass production or nothing." Incidentally in India we have to depend enormously on semi-skilled labour at all times, in peace and war.

The writer sums up. "Even if the weapon is not quite so perfect, it is better to have a weapon which can at once be made

by mass production than a weapon in which many parts have to be redesigned for mass production."

Probably the shortest possible summary of the duties of the newly formed branch of A. H. Q., that of the Master-General of Supply is "To watch the lines of communication behind the base, and initiate all steps that are possible to shorten and protect them."

The three older branches of A. H. Q., "G." "A." and "Q." in carrying out the essential military duty of the army, *viz.* the locating and destruction of the main fighting forces of the enemy wherever they may be, have essentially to be looking in the direction where the enemy is. The new Branch has to guard their back.

Some such sort of organisation is being formed in all countries, though it is not always easy to trace as it effects all fighting forces, army, navy, and air.

In England the matter is dealt with by the Cabinet Committee of Imperial Defence by means of Committees and Sub-Committees with special organisations in the army, navy, and air force. In the army the branch of the Master-General of the Ordnance covers the greater portion of the army part of the ground, particularly after the more recent developments though the Quarter-Master General still deals with a part.

In India we are entirely dependent on England for naval defence. The air force here is essentially dependent on import from England, with advance bases locally, though the organisation is sufficiently elastic on both sides to enable them to use the M. G. S. Branch as required. There can however be no fundamental change for a generation or two, until Indian industrial development has reached a pitch far beyond what we dream of now. The general military policy of falling in line with England with only such modifications as Indian conditions necessarily entail, let the late Commander-in-Chief to formulate certain conclusions after 2½ years experience in India. These conclusions were so natural a consequence of previous developments, and the lessons of the war, that, once formulated, they received instant acceptance by the authorities both in England and India, and the M. G. S. Branch was formed forthwith.

The branch consists of four Directorates with duties that are interdependant. These are—

- [M.]G. I. Ordnance Factories and Manufacture.
- M. G. 2. Artillery.

M. G. 3. Contracts.

M. G. 4. Farms.

The directorate of Ordnance Factories and Manufacture has to administer the army factories in India, and to assist the development of manufacture in India by private manufacturers. In India there are no armament firms, and in consequence local munition factories were developed. There are now nine of these establishments located as shown below:

These establishments are:—

| | |
|--|--|
| Metal and Steel Factories, Ishapore. | Steel furnances, non-ferrous rolling mills, shell forging. |
| Cordite Factory, Nilgiris | Cannon cartridge cases, explosives. |
| Gun and Shell Factory, Cossipore. | Guns and gun parts, empty shell, fuzes, primers etc. |
| Harness and Saddlery Factory, Cawnpore. | Leather and leather equipments. |
| Rifle Factory, Ishapore | ... Rifles, Bayonets and components, under extension to repair machine guns and components. |
| Ammunition Factory, Kirkee. | ... Assembling and filling of all ammunition and making of S. A. cartridge cases and bullet. |
| Gun Carriage Factory, Jubbulpur. | ... Gun Carriages and Army Vehicle Miscellaneous stores. |
| Clothing, Factory Shah- jahanpur. | ... Army Clothing. |
| Clothing Factory, Madras. | |

The responsibilities of the Director cover the following:—
Provision of plant, staff and building in the factories to meet the army's war requirements, the maintenance and training of a nucleus staff in peace sufficiently to render rapid mobilisation possible. The supply of army demands in peace to keep the factories ready for mobilisation, the organisation of mobilisation preparations and the provision of reserve stocks requisite, the study of the lines of supply of materials practicable and the possibilities of use of alternative material, and the correlation of output and allocation of funds between the factories to produce the assembled articles required. In addition as shown by the second part of this

title he has to study the manufacturing capacity of the private firms in India, and keep in touch with their development with a view to ascertaining how much they can be utilised in war, how their war capacity can be organised and expended, and how much it is practicable to reduce army capital expenditure in consequence. He has also to study probable future developments in army requirements, and endeavour to anticipate demands using safe lines of communication.

The fundamental condition governing these army factories is that they exist solely for the supply of army requirements in war. Their equipment has to be that capable of supplying, under war conditions of continuous working, the calculated requirements of the largest force for which the Government of India accepts responsibility, with a reasonable factor of safety, to cover the well known fact that each war demands a higher standard of supply than any previous one. If private factories can be depended on for part of the war requirements, Government equipment is reduced.

Running parallel with the factory organisation but dealing on the one hand with the factory side and on the other direct with troops is the Directorate of Artillery. The title of the Directorate is taken from the War Office organisation. Put in conversational language the duties of the Directorate are to ascertain army requirements from the troops, to translate army wording into language capable of being followed by a manufacturer, to verify by inspection of the manufactured article that the manufacturer has understood this translation, to follow up the experience of the troops with the articles supplied and see that these meet requirements, and to see that these articles are the most efficient and suitable that can be supplied regularly in peace and war having regard to the manufacturing possibilities of the time and place.

The responsibilities of the Director of Artillery cover the following points:—

He has to get policy specifications from the army (G. S. Branch) for all lethal, and technical equipment other than M. T. and convert them into manufacturing specifications, to watch equipment patterns and scales and advice on alterations, to see that manufacturers are fully supplied with all the requisite particulars and data to guide manufacture, to keep patterns interchangeable with those adopted throughout the Empire, and to follow up changes of Empire patterns, to inspect all items supplied to verify

that they are in accordance with the authorised patterns and up to standard required, to see that no waste is incurred by the use of material of an unnecessary high standard, to assist the D. O. F. and M. in the development and selection of alternative possible materials with a view to ensuring continuity of supply irrespective of enemy action, to watch the study of ballistics, and provision of range tables and similar things for the troops, to give technical advice ensuring the condition of stores with troops does not fall below the technical standard, to consider inventions and designs, prepare publish and distribute equipment regulations and to allocate initial supplies of new equipments.

That part of the duties which involves correspondence with G. O. Cs. and troops is carried out almost entirely by the staff at A. H. Q., although inspectors may correspond with and visit troops regarding their own specialities. That part of the duties which involves correspondence with manufacturers is dealt with partly by staff at A. H. Q., and partly by inspectors, who are:—
Station.

| | | |
|------------|--|--|
| Ishapore | ... Inspector of Guns & Rifles. | Responsible for outturn of all types similar to that made in the Calcutta group of factories. |
| Jubbulpore | ... Inspector of Gun Carriages and Vehicles. | Responsible for outturn of all types analogous to that made in the Gun Carriage Factory, Jubbulpore. |
| Cawnpore | ... Chief Inspector of Stores and Clothing. | Responsible for outturn of clothing, harness, saddlery, and all general stores. |
| Kirkee | ... Inspector of Ammunition. | Responsible for all ammunition outturn. |
| Kirkee | ... Chemical Inspector | Responsible for all chemical outturn. |

These Inspectors have assistants who may be located at the Inspectors' headquarters, or elsewhere as required.

There is also a Proof and Experimental Station at Balasore where all firing tests of army goods are carried out, and experimental firing and range table work is done.

This Directorate has also to have mobilisation programme. Although the mobilisation expansion involves smaller numbers, it involves in some ways a more difficult problem than that of the factories. The requirements for recruitment are practically entirely skilled men with knowledge of the trades involved sufficient to make them capable of guiding private firms.

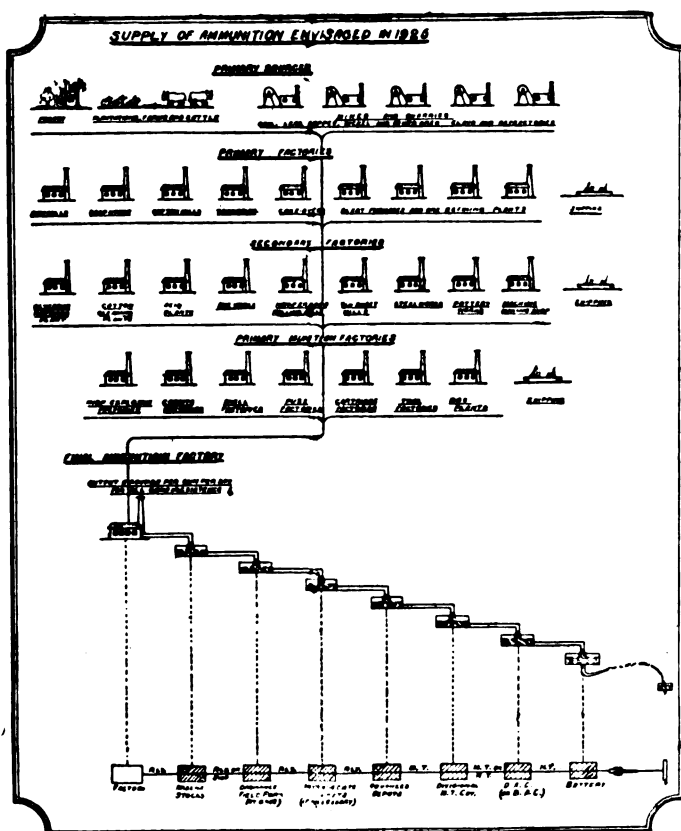
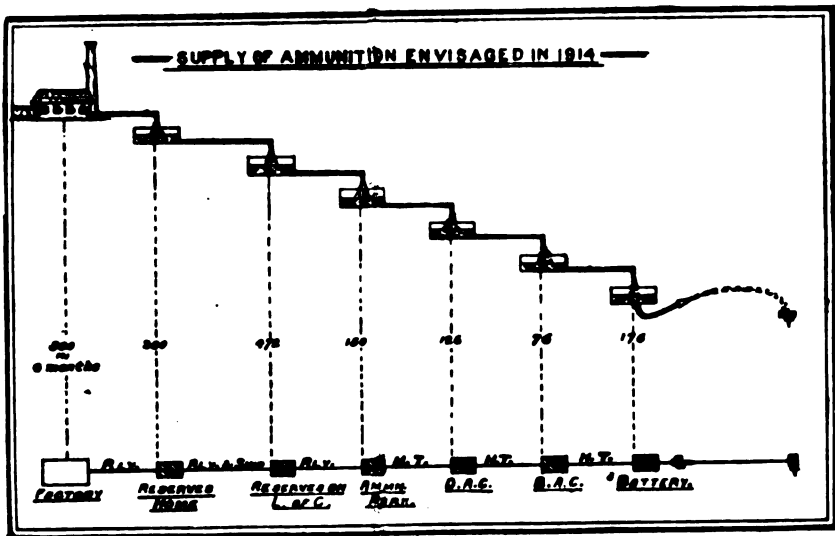
The interlock between these two directorates, is obvious though the lines of demarcation of responsibility are clear. In addition to the above responsibilities both these two directorates are liable to be called on in advisory capacities, for example the M. G. S. was recently asked to advise on the possibilities of local supply of air force material, and again on problems resulting from a proposed rearmament of Mountain Artillery.

The next directorate to consider is the Directorate of Farms, which is responsible both in peace and war for organising the whole supply of fodder, other than that drawn by local requisitions in the field and for a part of the supply of dairy produce required. It has to set a standard of practicability of supply to contractors, which involves research work on crop production and on the breeding and treatment of cattle. It has to ensure as far as is possible that no local failure of crop can entail any inconvenience to the Q. M. G. in maintaining supply to troops. The Directorate works by means of farms scattered all over India.

The last is the Directorate of Contracts. In conversational parlance it is the broker and buyer for the army. It deals with the less specialised items of army requirements, and connects the army with the general trade of the country. The Director's responsibilities cover the following points:—

He has to know where articles can be procured normally in peace, and to keep *aufait* with the practicabilities of supply in war, to place all army contracts at the most advantageous rates practicable, and to be so prepared that on mobilisation he can arrange contracts so as to meet immediately and continuously the war demand of the army for goods of the type normally supplied by the general trade of the country. This war demand includes both that directly required by the army, and that required for the maintenance of working of the factories.

This directorate carries out its duties partly through its own agencies, and partly through the Indian Stores Department. This latter is a purely civil department started mainly because war experience showed that even the private trade and



living of the country could not function properly, if the trade communications were exposed to enemy action, and that it was essential to foster an internal independent line of supply wherever possible.

The Director of Contracts has to keep in close touch with this development, and verify if it is enough for army war requirements. If insufficient he has to indicate the amount of shortage, so that the import line can be watched.

The mobilisation of this Directorate is complex, mainly because it is so difficult to formulate. The arrangements for supply of crushed grain, however, illustrate it fairly well. The peace diagram is an economical working scheme but it looks extraordinary, until one sees how it fits war conditions.

In peace Lahore supplies part of the north of India as well as Central India and the Madras Presidency. In war it doubles its output and supplies all troops across the Frontier, while Lucknow also doubles its output and feeds Central India and Madras.

The Master General of Supply Branch really starts from the nucleus formed by a part of the old D.G.Os.' organisation, with the addition of certain uncorrelated work which used to be performed by the Q.M.G.'s Branch. It forms a coherent and elastic organisation, fully correlated, for producing the supplies required by the Q.M.G.'s Branch, and in the event of a war of such duration or magnitude that the whole nation is involved, forms the nucleus for the formation of a ministry of munitions with all the powers of the defence of the Realm Act. Incidentally all sections of the Branch have to envisage this possibility and have ready the necessary draft Ordinances to come into force on mobilisation.

Naturally such an organisation does not spring into being fully equipped at a moment's notice, with every preparation complete, I have described the objectives at which the Branch aims, and we are gradually developing the actual practice to attain these ends.

SOME IMPRESSIONS OF THE ARMY MANOEUVRES, ENGLAND, 1925.

By Colonel C. A. Milward, C.I.E., D.S.O.

To officers in India who have not been able to keep in touch with the late Army Manœuvres at Home personally or through the papers, some impressions of a military spectator at these manœuvres may be of interest.

These manœuvres, the first on a large scale since the War, were framed specially to test the progress of modern inventions, mechanicalisation, etc., and their effect on strategy and tactics, so as to give the authorities a line to go on for future organisation.

As a spectator, although one could not be in all places at once, by discussion with other military spectators, one acquired a good idea of what was happening and learnt a lot. There were between 500 and 600 military spectators present, many of whom came from India, but the writer never experienced any trouble through being held up and everyone was very ready to help.

Officers from India, who wish to keep in touch with the Army in England, would learn more however, by being attached to formations at the Divisional and Brigade Manœuvres, than by attending Army Manœuvres. Various officers did this this year, and no doubt they benefitted greatly. It would be all to the good of the Army in India if such attachments could be encouraged to the utmost extent, even if they cannot be made a compulsory part of every officer's furlough.

Scheme.—The general scheme of manœuvres is probably well enough known. The Western Force, numerically inferior but more mobile, was ordered to fight a delaying action till noon on the 4th day when reinforcements would arrive on the line of the R. Avon which ran north and south, 20 miles west of the Frontier between the two states. It was the rôle of the Eastern Force to annihilate the Western before its reinforcements arrived. (See sketch map).

At the moment the Manœuvres opened, the Eastern Force had one division extended from Whitchurch almost to Winchester over a front of 12 miles close to the Frontier which ran generally

north and south 1 to 7 miles east of the R. Test. Its other two divisions and its cavalry brigade were 18 to 26 miles in rear (east) of this, heads at Hook, Petersfield and Aldershot.

This advanced division was thus somewhat in the air and liable to defeat by the more mobile Western Forces.

The Western Force had one cavalry division of 2 brigades and one infantry brigade within five miles of the Frontier at Andover and Fullerton respectively while its other three infantry brigades were some 18 miles in rear, at Tidworth and Bulford. One of the latter brigades was mechanicalised, capable of movement by lorry, of which more hereafter. It had also an Armoured Car Company and a brigade of mechanicalised Artillery, while each Force had a battalion of Tanks of which the Eastern Force had 24 to the Western 16.

The ground over which the Manœuvres actually took place consisted on the whole of the open undulating country, east of Salisbury plain and north of Winchester, very like that of the north of France, the Somme. There were many large woods which facilitated concealment from the air.

Plans.—The plan of the Western Force Commander was to do what damage he could with his more mobile troops to the isolated detachments of the Eastern before the latter's reinforcements arrived and then to retire by Time Table to three defensive lines of resistance which he had prepared east of the River Avon.

The plan of the Eastern Commander was to envelop both flanks of his adversary when touch had been gained and the latter's position fixed.

1st Day.—The Manœuvres opened in very wet weather: it poured with rain unceasingly the whole of the first day until 5 P.M. Aeroplane reconnaissance was very difficult, and the Western Commander had no information from this source of the march of the left wing consisting of the 1st Division, of the Eastern advance. Not until his Armoured Cars had carried out a daring reconnaissance and had located this advance, did he know of the progress of the 1st Division and its direction of march.

Armoured Car Raid.—This armoured car reconnaissance is worth notice. Two sub-sections moved 33 miles to a position between the line of march of the two columns of the Division and there, concealed in a wood, they lay up all day and watched the march of both columns. They sent back information by motor cyclist who arrived at Headquarters in 2½ hours. Then getting

behind one column, one sub-section proceeded the following night to travel up the supply section of the division shooting into the vehicles. This, if practicable in actual warfare, would have placed the division for one day on its emergency ration.

One armoured car sub-section then went on 26 miles further to the Farnborough aerodrome, forced the sentry who fled, and went on to the landing ground. Unfortunately owing to the bad weather, no night flying was in progress, no machines out and the armoured cars would only fire into the Hangars.

On return they again attacked the M. T. supply column of the 1st Division and did further damage before they returned with the loss of one car to their formation.

Such a raid makes one think how attacks by armoured cars or tanks on columns of troops on the march are to be met. It is impossible to block every road with trees. Some kind of mobile flank guard with guns and anti-tank infantry weapons would seem best. Such rear services as M. T. columns must be specially protected as well. Such occurrences as this and that of the capture of the Western Divisional Headquarters by tanks on the third day, seem to suggest the provision on a generous scale of anti-tank guns, both to meet such attacks and also for the moral of the infantry themselves, who at present can only retire and scatter when attacked by tanks and armoured cars in the open unless closely supported by artillery.

Mechanicalised Troops.—With regard to the engagements of the first day, Western Force sent one Cavalry Brigade, their mechanicalised Artillery Brigade and their Infantry Brigade in lorries to strike and roll up before reinforcements arrived, the right flank of the advanced Eastern Division about Whitchurch, thereby turning the line of the Test River from the North. The Cavalry Brigade and Armoured Cars got into touch with the opposing Infantry about 09.30 hours and were held.

The chief interest centered in the movement of the Infantry Brigade complete with its 1st Line Transport, by lorry.

It took about 135 lorries to move this Brigade at weak peace strength. The lorries for the animals were fitted with ramps behind, which let down easily by means of pulleys—some of the cookers were carried in the lorries; other cookers, and the water carts and limbered G. S. wagons (pole removed) were towed along behind the lorries.

One also noticed a brigade cable cart dragged by a Citroen car—wheel in front, track behind. This was going along the road at about ten miles an hour and making no more noise than an ordinary motor car.

One noticed the R. T. Tenders, a lorry with a high framework of iron above it, with which each divisional headquarters was equipped for communication by Radio Telephony to aircraft. It was understood that this worked well, while that to the tanks was not so satisfactory.

The number of 1st line vehicles a Battalion now has, with its eight machine guns and 32 Lewis guns, struck one.

As several accidents had occurred from animals falling down in the lorries when going down hill, the M. T. Column was halted in Doles wood at the top of a very steep hill and there the brigade debussed and had to march 3 or 4 miles further than they would otherwise have done.

It is worth noting that this Brigade was not taken by M. T. on to the flank of its enemy but rather to a point 7 or 8 miles to the latter's right front. To reach a point for debussment more on the flank a very long detour almost to Newbury would have been necessary, and it is calculated that they would have arrived in touch with the enemy half an hour latter than they actually did. The country over the Berkshire Downs south of Newbury is very hilly and the roads did not lend themselves to a movement direct to a more effective point of debussment. Moreover a circular road for turning the lorries did not exist, a vital necessity for an M. T. column.

Western Attack.—The Brigade had been carried 16 miles by M. T., then had to march seven miles to gain touch with the enemy. Presumably it started from Tidworth punctually at 07·00 hours, at the commencement of hostilities; its debussment was not completed till 10·05 hours. Such an M. T. column actually moves 5—8 miles per hour. Although the M. T. were concealed on a road in a thick wood, they were bombed while loaded, by hostile aircraft. The Brigade advanced on a wide front at 14·05 hours against the enemy. At 16·00 hours its attack commenced and at 17·20 hours in a tremendous storm of rain it was adjudged to have broken through the Eastern defence and to have captured Brigade Headquarters east of Whitechurch. It is doubtful if in reality they could have broken through so rapidly; they were

opposed by the fire of 2 brigades of F. A. and 3 pack batteries, with excellent observation on to an enemy advancing over some very open country.

The difficulties of umpiring between two widely extended forces, of all arms especially artillery, are very great.

In any case they were too late. If their attack had been made in the morning in full strength, they would have broken right through. As it was, the leading troops of the Eastern Right Wing after a fine march of 16–20 miles, with full packs had arrived. One battalion had been sent on in lorries and had arrived at 90·00 hours (16 miles in two hours) to prolong the Eastern right flank. The Eastern right flank guard made its presence felt at 13·10 hours and in turn had taken in flank the Western Cavalry Brigade when engaged in the attack. The 4th Guards Brigade arrived at the moment the Western attack had succeeded and, although wet through after a 20 mile march and dispersing in billet and bivouac, with true initiative of the battalion commanders, at 18·10 hours counterattacked brilliantly and drove out the Westerners, releasing Brigade Headquarters.

Use of M. T.—It will be seen from the above that the employment of M. T. to carry a complete infantry brigade is not all plain sailing; there are many considerations which must be taken in to account. It would seem that not much advantage is to be gained by moving a large body of troops by M. T. for less than a certain distance. The same limitation is found as in moving troops by train; it is laid down that it is not worth while moving a division by train less than 60 miles.

For a small body of infantry without transport it is a different matter. Thus one battalion of the Eastern Force arrived punctually 16 miles in two hours by M. T. to prolong the right flank.

Secondly it would seem that M. T. are better adapted for the movement of troops frontally where the flanks of the column are safe and can be better protected from aircraft. To move a small body of infantry wide round a flank by M. T. is to run considerable risk. When the infantry are debussed they are to a large extent in the air, for, they cannot be followed close up by their mounts as is the case with cavalry. They may have to march back to their lorries and then they may find their lorries turned in the wrong direction.

Patrolling.—The writer was enabled to see the results of some excellent infantry partolling by officers partols this day. The infantry on arrival did not sit down and rest: they immediately sent patrols far out in all directions who brought back very good information, thus affording local protection to the rest of the unit and, to the Brigade Commander, valuable data.

2nd Day.—On the second day the weather cleared somewhat, but neither side gained touch with its opponent.

The Western Commander delayed his retirement but in the afternoon proceeded to move off by Time Table so as to arrive in his second prepared position before dark.

He made no attempt to hold his first position, realising possibly how difficult it is in actual war to induce troops who have been turned out of one strongly held position after a stiff fight, to occupy and stay in a second position, unless fresh troops are available.

The Eastern Force never got touch with their opponents this day: they were preparing for a night march.

Effect of Aircraft.—Here the paralysing effect of modern aircraft on open warfare was apparent. Some think it is a bogey and is overdone. However that may be, very few troops were visible—infantry, cavalry, artillery and transport were all hidden in the woods. When the Eastern Cavalry Brigade advanced early in the morning to make good the River Test, they were immediately pounced upon by hostile aircraft.

3rd Day.—On the third day the opposing Forces met. The Western Commander had halted in his second position having decided there to hold up the advance of the Eastern Army until his reinforcements arrived.

The Eastern Commander failed to envelop both wings of his opponents as he had planned to do. Indeed throughout the Manœuvres, in spite of unopposed aerial reconnaissance, the fog of war was thick. This was in part due to the thick weather of the first day.

The Eastern Commander had come to the conclusion that the Western Force had taken up a position in advance of that which they actually had occupied. Thus his two enveloping attacks, in reality, developed into more or less frontal attacks, while his mobile troops, instead of finding themselves in rear of the Western position, struck only the latter's flanks where they were ably countered by the Western mobile troops.

No doubt in actual warfare the Air Force would have photographed exactly the trenches of the Western positions and given him exact information of his objective. But in manœuvres no digging was possible.

It is worth noting that on this actual day of the battle, the Western Commander did not use his mechanicalised infantry brigade as a mobile reserve for rapid movement to the threatened flank: they were in the line. Possibly in this decision he was influenced by the consideration of the time it takes to embuss and debuss a brigade.

Tanks.—The Eastern Army had carried out the approach march by night and by 09-00 hours their Tanks had swept round the Western right flank and claimed to have captured Divisional Headquarters at Cholderton. The Tanks of both sides then met and a confused fight at close quarters ensued.

Tanks seem to have been employed on these manœuvres in their second rôle as cavalry on an independent mission round the flank. They were not used in what F. S. R. lays down as their principal duty, to break through the infantry positions, which were closely supported by concealed pack artillery. In open moving warfare, with wide frontages when guns can be well concealed close behind the infantry with good observation, one can realise that tanks can be easily knocked out by artillery. When armies are in close contact in trenches, and tanks can be brought close up under cover of darkness and guns with difficulty concealed in open country, the situation is quite different.

The Western Commander finding his right flank threatened moved his Cavalry Division behind his front from left to right and met and discomfited the Eastern Cavalry Brigade. The Eastern Tanks away on the right flank were surprised by the same Cavalry Division whose Horse Artillery debouching from behind a wood, engaged the hostile Tanks and were adjudged by the umpires to have put 5 out of 8, out of action.

The Attack.—Meanwhile the Eastern Commander had fixed the position and extent of the Western position and at 15-30 hours the attack commenced.

Quarley Hill was an outstanding feature of this position jutting out like a bastion in front of Western right flank, and it was on the top of this that the majority of the spectators and all the Foreign military attachés, took up their position.

It was held by a detachment of infantry with machine guns. These were all posted close to the top of the Hill, mostly in the old Roman entrenchments which encircle its crest. The slopes of the Hill are covered with thick bush which would render observation difficult for men posted among them.

This Hill would have been a veritable shell trap and the 1st Divisional Commander completely blinded its garrison with smoke from three 4.5" Howitzer batteries.

It was attacked by two Infantry Brigades of the 1st Division.

The approach march of the infantry was very cleverly carried out. Throughout Manœuvres good training in the matter of taking cover was very noticeable, and not until the actual attack took place and the lines of section debouched into the open, had any infantry advance been noticeable from the top of the hill although this had a command of some 400 feet. So cleverly had the infantry taken advantage of the hedges and woods, although the country was not very enclosed, that one had no idea that two brigades had been brought up to within attacking distance. It is not known how far they had been visible to aircraft.

In the two attacks which were watched on these Manœuvres, one was struck with the wide frontages, lack of weight and on the first day certainly, the disjointedness of the attack. This impression may to a large extent have been due to the very weak strength of battalions.

On the first day sections advanced in file or small columns, some taking full advantage of the valleys and hedgerows, others moving over the open fields at very large intervals and distances, under a heavy artillery fire and taken in flank by machine guns.

The move of these small columns over the open did not impress one. They lacked the moral effect which lines of men advancing produce on the nerves of the defender: it would appear easy to concentrate fire on each small column in turn and knock it out. Will infantry push on in this formation under heavy fire?

On the third day the two brigades advanced abreast, sections in line in square or diamond formation with reserve battalion some distance behind,

Western Force had planned a counter-attack to this Eastern advance and this was beginning to develop out of the woods on to the extreme left flank of Eastern attack when the Cease Fire sounded.

Aircraft.—Throughout this third day, the day of battle, the aeroplanes of both sides were very much in evidence.

They were not permitted to engage each other so a good deal of unreality occurred. One was nevertheless much struck throughout the manœuvres by the power of modern aircraft over land operations. The Cavalry never seemed able to move in the open without being immediately observed from the air and being pounced on by aircraft.

Infantry were forced to move very largely by night and to hide by day when within ten miles of the opposing forces. Every soldier knows how exhausting this is to the infantry man. When they moved out of the woods by day they moved in small columns at long distances. One wonders what length of road space a division would take up under these conditions. When closed up it takes 15 miles on a single road.

If aircraft have in reality this paralysing effect over operations, the side which has not command of the air will have a very poor chance of success in battle. This is the main impression which the manœuvres left on one.

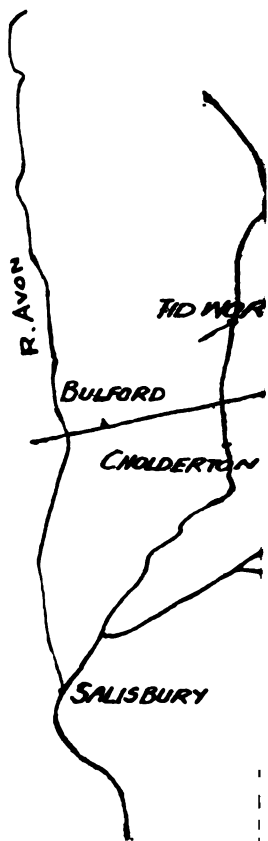
With regard to anti-aircraft measures one noticed many limbered G. S. wagons among the transport, fitted with Lewis guns on A. A. mountings.

Conclusion.—With regard to mechanicalisation and the many types of arms, weapons, vehicles, one's mind is confused by the complexity of an army equipped on the latest ideas, and with results which may eventuate when ideas are further developed.

The difficulty of utilising these arms and inventions which all move at different speeds, and fitting them into battle to the fullest advantage, will be great.

One wonders what the place of the infantry will be in an army when modern science in military invention has been utilised to the full.

One can only hope that the authorities will be granted that gift of clear thinking and that tactical genius which has in the past been the birth right of the British race and has enabled it always to gain the initiative in tactics over other nations.



The outstanding feature of the manœuvres was the troops. The infantry marched long distances 20—25 miles in pouring rain with full packs with hardly a casualty. Some brigades carried the blanket and waterproof sheet in the pack, others only the latter—great coats were carried by lorry which did not always arrive. In some instances the men had to spend the night in the water-logged meadows with only the waterproof sheet which they had worn over their shoulders all day.

They kept cheerful and keen, their turn out remained excellent and their physique was splendid. In short they showed the same spirit which enabled them to win the War.

C. A. M.

CORRESPONDENCE.

DEAR SIR,—Reference problems, by "Puzzled," in the April number of the "Journal."

The method to be adopted will depend, to a very large extent, on the nature of the country in which the Brigade is operating. This may vary between the cultivated plains of the Punjab, where the view is much restricted, but where troops can move freely, in any direction, the open deserts of the Iraq, with unrestricted movement and view, the undulating veld of South Africa, where freedom of view and movement vary from any, and lastly the close cramped country of England and Europe, where movement and view, are much restricted.

The situation has given us, states that the Brigade is advancing towards the enemy, it is an axiom that early information as to the enemy's movements and dispositions, is of vital importance, this early information can only be gained by Cavalry. Therefore some proportion, at any rate, of the Squadron, must be pushed out well ahead. The conundrum, before us is to decide on what proportion, and its organization.

We will consider "Puzzled's" problems in turn.

- (a) Should the entire Squadron be attached to the Advance Guard? This course of action means that the Brigade Commander surrenders all control over his Squadron, to his Advanced Guard Commander, who naturally employs it for safeguarding his own Command. This in its turn implies keeping the Squadron tied, to some extent, to his apron strings and a certain forfeiture of their mobility and their capabilities of a wider scope of action. This surrender of his Cavalry to his Advanced Guard Commander, subordinates the information to be obtained by the Squadron, entirely to the wishes of the latter, who is bound to take the more circumscribed view, as to the rôle of the Squadron, than the wider view of the Brigade Commander, who has to consider the welfare of the Column as a whole.

Before allotting to an Advanced Guard, any proportion of a Squadron, which after all is not a very large body of

mounted troops for a Brigade Group, the question must be considered, as to whether they are really essential for its immediate protection, for if not it would surely be preferable to employ them in the larger sphere of extended reconnaissance. Here we must be guided by the nature of the country. In Iraq, I should say "NO"—there is nothing to obstruct the view of the advanced Scouts, and if the Advanced Guard Commander requires any special information with regard to a village or grove of palms he can send out a patrol of mounted officers from his infantry.

In close country such as India and England, the case is different. Here visibility is poor and mounted troops would prove of great value to the Advanced Guard Commander. Bearing in mind the need for our cavalry in the wider sense of security, and information as regards the column as a whole, we cannot in the latter instance, spare more than a troop for the Advanced Guard, to be supplemented, by infantry mounted officer patrols.

- (b) Should the Squadron be used as a protective screen? The formation of a protective screen, certainly possesses the advantage of searching the ground on the whole front of advance, but it must of necessity lead to a wide dispersion of the Squadron with consequent weakness everywhere. All control would pass from the hands of the Brigade Commander and in the event of opposition being encountered, it is probable that the Squadron would be in insufficient force at the point of opposition to force their way through and obtain the information required, we could hardly expect the reserve formation to be dashing about on the wide front covered to help break through wherever opposition was met with, and yet, without such assistance, it is difficult to see how a thinly extended screen could carry out their mission by themselves.

- (c) Should part of the cavalry be allotted to the Advanced Guard, and part kept under the control of the Brigade Commander?

The question as to the proportion of Squadron to be allotted to the Advanced Guard has already been considered

under "A" above. The Brigade Commander must have early information as regards the enemy and to obtain this, he must push his cavalry well out ahead. In order to be able to do this, and obtain the precise information required, he must retain as large a proportion of his Squadron as possible under his own hand. His orders to his Squadron might be expected to take the form of questions which might be answered by "Yes" or "No", *i.e.* "Is the ford at X practicable for all arms?" "Are the enemy holding the village of Y?" He wants this information as early as possible and can only make sure of so obtaining it by retaining some at any rate of his Squadron under his own hand. It may be expected then that the Squadron would be used as strong patrols, whose mission would be to obtain certain definite information and prepared to fight and strong enough to fight, to carry out their task. As much and no more as the Squadron Commander considered necessary, would be employed on these patrols and the remainder, would remain with Squadron Headquarters with the Brigade Commander.

The strength of the patrols and the manner in which they carry out their tasks must be left entirely to the Squadron and Patrol Commanders respectively,—who must be given an entirely free hand, to sum up.

I am in favour of:—

- (1) Alloting a Troop to Advanced Guards in close countries such as India and England, where visibility is bad, but not in open country such as Iraq.
- (2) Keeping the Squadron under the control of the Brigade Commander and employing every available man of the Squadron (after deducting the Troop as in (1) above) as strong fighting patrols to obtain definite information.
- (3) I am not in favour of alloting more cavalry to the Advanced Guard than is absolutely necessary.

Yours faithfully,

H. E. CROCKER,

Major & Bt. Lieut.-Colonel.

(With so small a force of Cavalry as a Squadron the use of it as a "Cavalry Protective Screen" would be the exception rather than the rule. In normal circumstances it will not be possible to allot a portion of a Squadron to the Advanced Guard Commander. The Squadron should usually be employed under the direct orders of the Force Commander in the manner outlined in F. S. R., Vol. II, last portion of Section 47 (2)—EDITOR.)

DEAR SIR,—Colonel Strettell's letters on the Hotchkiss Rifle are most interesting. I differ from him on one point and send it up for consideration by those interested in H. G. handling. As regards Cavalry there can be no hard and fast rule but I consider that only as an exception should H. Gs. charge with the Regiment, the reasons are obvious and numerous; rather should the H. Gs. be withdrawn and placed under the direct command of the C. O. before the charge; there is always time in actual war, *vide* C. T. II, Sec. ii, to make a moderately good plan.

The Commanding Officer then has 9, at present, next April 12, automatic rifles, which he can use whenever required.

He thus becomes like a French boxer of the old style.

His machine guns are the foot applied to the pit of the stomach to paralyse his adversary, his squadrons are his right to deliver the knock out, at the time of the kick, and his H. Gs. are his left, to be used as a swing, a jolt or a steadier as required to finish things off.

Yours faithfully,

B. ABBAY.

DEAR SIR,—I am very grateful to "Cavalry Horse" for giving me a lead over the fence, but the obstacle still seems to me to be too high to negotiate.

In the first place I cannot agree with his definition of a principle as "a course of action which cannot as a rule be departed from without serious consequences." There are so many such courses of action that a list of such principles would fill a book. It seems to me that a principle must be a reduction of something to its lowest terms.

Take surprise for instance. I do not consider that the fact that its non-employment may lead to serious consequences raises it to the rank of principle. Failure to reconnoitre may lead to serious consequences, but Reconnaissance is not a Principle of War. Reconnaissance is a strategem embodying (chiefly) the principle of security, and surprise is a strategem embodying (chiefly) the Principles of Offensive action and Security—the latter in its negative form.

As regards mobility I said in my article that the word might be read in a technical sense, *i.e.* flexibility and the power to manœuvre, and this is evidently how "Cavalry Horse" reads it. But this mobility is merely the result of—

- (a) Suitable training; *e.g.*, physical fitness, march discipline, animal management, etc., and
- (b) Suitable equipment; *e.g.*, motor transport, well designed clothing, field cookers, etc.

Fire power is in exactly the same category as Mobility as defined by "Cavalry Horse." It is the result of—

- (a) Suitable training; *e.g.*, straight shooting.
- (b) Suitable equipment; *e.g.*, a well designed rifle.

But Fire Power is not a Principle of War. The advantages of Mobility and Fire Power both depend on the obvious fact that, other things being equal, the best trained and equipped army will win.

Maintenance of Objective, "Cavalry Horse" has only strengthened my suspicion that maintenance of Objective, except in so far as it includes the Principles of Offensive Action and Concentration, is not in itself a real principle.

It is true in respect of the final military objective, which is the destruction of the enemy's field army, but it is not necessarily true in respect of intermediate objectives. For instance in August 1914 Von Kluck's objective was the envelopment of the allied left. If he had changed this objective on August 23rd and endeavoured to knock out the British Army with a direct blow the whole course of the war would have been changed to his advantage. But he maintained his objective, lost his chance and lost the war. In the case cited by "Cavalry Horse" surely the violation of the real principles of Concentration and Security are quite sufficient to account for Denekin's defeat, without dragging in the imaginary one of Maintenance of Objective?

The truth of the matter seems to be that once an effort has been made and failed it is useless to repeat it unless the conditions are changed, *e.g.* by a change in the relative strengths of the forces, or by the employment of a fresh strategem, such as surprise.

Economy of Force. Here "Cavalry Horse" has certainly dislodged the top rail, and I will consent to put one leg over. But he assumes that the word "Force" is used with different meanings in principles (IV) and (V), which justifies my charge that the expression in F. S. R. is at fault. But I still think that all the essence of Economy of Force is already contained, if not in concentration alone, then in one or more of the following four principles; Security, Co-operation, Concentration and Offensive Action; and that on these four hang all the law and the prophets.

Your faithfully,

ORDNANCE MULE.

DEAR SIR,—I am sorry, but very little of my crust has been worn off by "One who is."

The fact is, he has not answered my question. Since your readers are not likely to turn back to the last number to see what it was I will repeat it:—

Does Form V really show the C. O. whether as regards money and stores "the best possible use is being made of them?" Does it give him "an invaluable and practical guide to his proper future procedure?"

The contention of the original article appeared to be that this object would be attained by a scrutiny of "perhaps half an hour, a month or less if nothing is wrong."

The reply of "One who is" starts by showing the value to *Army Headquarters* of the system. I never questioned this. It goes on to show how by a *yearly* scrutiny the C. O. can discover in retrospect which year of his administration has been the most efficient. Excellent, no doubt, but the agony is rather long drawn out if it takes two years to come to fruition; and this achievement is rather far removed from the "month by month examination" which is going to give him "an invaluable and practical guide to his proper future procedure."

I am afraid I must remain

Sir,

A CRUSTED TORY.

DEAR SIR,—Field Service Regulations, Vol. II, Section 111(a) says “The range and offensive capabilities of modern aircraft have tended to increase the importance of night operations owing to the difficulty of the movements of troops and their transport by day.”

No one will doubt this statement in fact one can now regard it as a platitude, for everyone realises that war in the future, especially war of movement to which we are devoting particular attention these days, will demand that ground troops must advance by night and fight by day.

Continuing to peruse Chapter X of Field Service Regulations, Vol. II, one finds considerable confusion in the terms used to denote the various stages of night operations vis-a-vis those formerly in use.

Higher authorities permit of certain flexibility in the use of terms but the lower down the scale one gets a demand for absolute rigidity as to the meaning of these terms appear. Recently there was a discussion in your “Journal” as to the dropping in the new Field Service Regulations of that well worn phrase “Line of Resistance” and one’s intelligence received rather a shock when it was suggested that the reasons for the disappearance of this phrase was the possibility of its implying “linear defence.” What this phrase meant to most of us has got to be expressed in orders somehow and the remedy has been suggested in the words “lateral area in front of which the enemy’s attack should break down under the fire of all arms.” This is all by the way but I should like to point out that those who revise manuals would do well to change old established terms as seldom as possible and think of the unfortunate India N.-C. O., who has to grapple with these frequent changes. However to return to night operations I will first illustrate my point by quoting from Field Service Regulations, Vol. II.

- (a) Section 113, para. 1.—“When a night march is made for the purpose of an attack its immediate objective is the position of assembly behind the covering troops where the ordinary march formation is to be abandoned.”
- (b) Section 115, para. 1.—“A position of assembly must be selected beforehand where the march formation is to be abandoned and deployment is to take place.”
- (c) Section 115, para. 3.—“The position of assembly must be easy to recognise at night. The change from march

formation to that of deployment requires very careful staff work. The routes leading to the position of assembly should be allotted definitely to the various units and properly controlled."

(d) Section 115, para. 4.—"At the assembly positions the formation is adopted in which the remainder of the advance is to be made."

Section 118, para. 1(i)—"Time of assembly at and departure from the position of assembly."

Section 118, para. 1(ii)—"Order of march and formations on leaving the position of assembly. Distances and intervals."

Section 118, para. (vi)—"Formation to be adopted at the forming-up places."

From a perusal of the above one is struck by the apparent confusion of thought in the use of the term "position of assembly." In some cases it denotes the position of assembly as we formerly understood it and other cases it obviously refers to the old "position of deployment." Again why the introduction of a new term "Forming up position" when the old "position of deployment" conveyed its meaning far more clearly?

I maintain that the term "position of assembly" should be used to denote what its literal meaning implies, namely the place where troops taking part in the night march, assemble and adopt the formation as ordered for the night march. The only other term required then is the "position of deployment" at which, the night march being completed, troops adopt the formation ordered for the attack.

It would appear that the writer of this Chapter had not made full use of the material at his disposal. It savours of France only, while the best instances of successful night marches are obtainable from a study of the Mesopotamia Campaign, *i.e.* the night march before the battle of Dujailah, March, 1916 and that before the battle of Daur, November 1917. The former was the biggest of its kind ever attempted in history and as a Regimental Officer at the time I have no hesitation in saying that both were examples of perfect organization and staff work. And yet how many officers of the present day have ever heard of these achievements and certainly few have had an opportunity of studying them. A few months ago I attended a lecture on night operations. The lecturer gave us examples ranging from El Afule 1249 B.C., to the late war but did not mention Dujailah or Daur.

For the benefit of military students I would recommend a close study of Chapter XXIII (with Annexures) of the Official History entitled *Mesopotamia Campaign, 1914—1918*.

It is unfortunate that the Official History cannot include the orders of lower formations. Those issued by the 3rd Division prior to both these battles would be invaluable as a guide for future reference in operations of a like nature as well as being of the utmost value to seekers after knowledge. Will not those who drew up these orders, and on whose shoulders responsibility for all arrangements rested, come to our aid and give us the opportunity to study these operations in all their details?

True, night operations on such a large scale are scarcely possible in any country but Iraq, yet that country will be the "storm centre" for some time to come and therefore it behoves us to study the tactical propositions peculiar to it.

I feel sure that any detailed account of these night marches will bear out my opening remarks as to the necessity for absolute clearness in the minds of all regarding the meaning of such terms as "position of assembly," "position of deployment" and "forming-up position."

Yours faithfully,
"PINDI."

SIR,—Will you kindly let me have an answer to the following two points about which there are in the Battalion two opinions:—

(1) In the case of an advance in Mountain Warfare, should the Advanced Guard troops be detailed in column orders as distinct from the picquetting troops, or should both be included under the heading of Advanced Guard?

(2) Is the column commander justified in taking the command of the Advanced Guard himself?

As regards (1), some hold that the Advanced Guard should consist of those troops only who will remain in the A. G. throughout the operation, i.e. the Van Guard, and the Main Guard. They have their special duties of protection and communication to perform, and they must be separately detailed in order to avoid any possibility of their being used as picquetting troops.

The other point of view is that all the advance guard troops should be detailed straight away as one force, and the O. C. A. G. will then make his own arrangements as to which troops are to be employed on picquetting and which on the duties mentioned above.

As regards (2), some hold that the Column Commander must on no account but in, unless he sees that something is obviously being done wrongly. That his proper place will normally be with the main body, and that he should trust a subordinate and on no account interfere unless it is obviously necessary.

The other point of view is that in an advance in mountain warfare, the most important decisions to be made are the positions and strength of picquets. The Column Commander is justified therefore in assuming this responsibility, and taking command of the A. G. himself.

Yours etc.,

KHYBER LEFT.

(1) Both should be included under the heading "Advanced Guard" and the commander named. There can then be no doubt about his responsibility for the picqueting of the route. The Column Commander would usually give him verbal instructions as to which part of his advanced guard should be used for picqueting.

(2) The principles of mountain warfare differ in no wise from those of normal warfare in this or in any other respect. The Advanced Guard Commander has his instructions and should be left to carry them out. If he gets held up and is unable to get on, the Column Commander would probably reinforce him from the Main Body. When the situation calls for the intervention of the Main Body the Column Commander would go forward and take control himself.

If the Column Commander wished to give the Advanced Guard Commander any special instructions as to strength of picquets, he would do so beforehand, but the responsibility for adequately picqueting the route lies with the Advanced Guard Commander (*vide* Manual of Operations on N.-W. F., para. 22 (i)).—EDITOR.

HISTORICAL.

I

Presented to the Institution by the General Staff, India.

(Maj.-Genl. Pollock, Comg. in Afghanistan, Dt. 16 Octr. 1842.

Reports march from Cabool, in progress to Hindoostan, of the Troops detailed within Official Docket.)

Camp Judulluk, 16th Octr. 1842.

SIR—I have the honor to report for the information of His Excellency the Commander-in-Chief that the Force under my command together with the troops under command of Major-General Nott moved from Cabool to Boot Khak in progress to Hindoostan on the 12th instant. On the same day I deemed it advisable to send forward the 1st and 2nd Brigades, the Mountain Trains, the 1st Lt. Cavy. the 3rd Ind. Cavy. and Christies Horse under Major-General Sir R. Sale, G.C.B., by the Goshpun Durra pass to Koord Cabool with a view of securing the heights of the Koord Cabool pass which are only accessible from that side. This precaution frustrated any intention which the enemy may have had of annoying our Troops in this difficult defile and on the following morning (the 13th) the passage was effected without opposition. Major-General Nott's Force halted at Boot Khak on the 13th and marched to Koord Cabool on the following day.

2. On the 14th I moved to Tezeen and in the evening destroyed the Fort of Khodabux Khan, the chief, whose active hostility has hitherto interrupted our Dak communication.

3. Yesterday I marched to Kutta Sung with the 1st Division while the 2nd under command of Major-General McCaskill encamped at Seh Baba and will continue one stage in rear of the first.

4. The two Divisions arrived this day respectively at Juddulluk and Kutta Sung. The detail in

1st Division.
1 Troop Horse Artly.
Capt. Abbott's Battery.
Mountain Train.
2-18 prs. and Det. Artly.
H. M. 3rd Lt. Dragns.
1 Sqn. 1st Lt. Cavy.
2 Ressls 3rd. Ind. Cavy.
H. M. 9th Foot.
H. M. 13th Foot.
26 N. I.
35 N. I.
1 Coy. Sappers and Miners.
Capt. Broadfoot's Sappers.
Corps of Jezailchees.
Sikh Contingent.
Bildars.

the margin shows the original strength of each. I found it necessary however in consequence of the scarcity of cattle and the difficulty of dragging heavy guns through this hilly country to destroy the 2 18-prs. and the shot which belonged to them.

2nd Division.
1 Troop H. Artly.
Capt. Blood's Battery.
2 Sqn. 1st Lt. Cavy.
2 Ressls. 3rd Ind. Cavy.
H. M. 31 Foot.
Wing 33 N. I.
Wing 60 N. I.
2 N. I.
6 N. I.

I have the honor to be
Sir

Your most obt. servt.

GEO. POLLOCK,

M. General Commanding in Afghanistan.

To

LT., COLONEL GARDEN,

Qr. Mr. Gl. of the Army.

(NOTE.—The writer of this letter was Major General Sir George Pollock, K. C. B., Royal Artillery.—EDITOR.)

II.

Published by the courtesy of Major-General M. R. W.

Nightingale, C.B., C.M.G., C.I.E., D.S.O.

"There are more things 'twixt heaven and earth Horatio.
Than are dreamt of in our philosophy."

MY DEAR NIGHTINGALE,—You have often expressed a wish that I should put upon paper an account of the curious dream I had about you in the Punjaub in 1848 and which strange to say came true in every, even the minutest, particular. I am sorry I did not at the time write it down, but every body so ridiculed the idea of its ever coming true, and I myself was so sceptical

on that point that I did not then think it worth while doing so. You alone the party most interested in the fulfilment of my prophecy had full faith in it. It was not to be expected that any one else should, and I am inclined to believe it was that extraordinary foreshadowing generally called a presentiment which sometimes unaccountably takes possession of our imagination and which so rarely deceives us that led you to believe in the destiny I foretold. My own impressions of this singular incident can never be effaced, and every particular is as fresh in my recollection, and comes as vividly before me now, sitting, writing in this quiet room, as it did in that wild region and on that eventful night when I lay down and saw a vision in my sleep.

Do you recollect the morning of November 16th, 1848? It was on that morning that I rode up to you and others of ours on the march and told you the particulars of a dream I had, had the night before and which was as follows:—I dreamt that our Regiment received the order to advance in line into action, that in front of the line was a *mound*, that after advancing a short time in line we formed *sub-divisions* and then *sections*, that I saw the enemy shooting at us from behind *bushes* and little *hillocks* with which the ground was apparently covered, and that *I saw you distinctly raise your right hand to your right temple as if shot through the head and then fall down.*

There are many, as you well know who will authenticate this, and will also bear witness how pertinaciously I adhered to the minutest detail. When I mentioned it next morning on the march, all who heard it ridiculed the idea of its ever taking place and I myself laughed at the thought of it. At the same time from the singularity of every occurrence having been so clearly and distinctly defined I had a sort of vague and uncomfortable notion that it would if not altogether yet partly come true. You also felt the same and imparted it only to me.

The dream was discussed that evening, slightly mentioned for a day or two after playful allusions were made to Jeremiah and the Prophets when I entered the Mess and so the subject died away.

And now let me recall to your recollection the morning 13th of January 1849 nearly two months afterwards. In the interim as you well know, the Battles of Ramnuggur and Sadoolapore had been fought, but our Regiment had taken no *active* share in either of the actions, nor had we except from sickness lost a single man. On the morning of the 13th we marched in order of

battle towards the enemy who were reported to have taken up two strong positions *viz.* "Moonj" and "Rusool" and our purpose was to force them to evacuate their strongholds. At about 10 A.M. the two divisions for some reason unknown to me at the time, united and we marched steadily on not anticipating from the circumstance of the original plan having been discarded that we were going to fight that day. The jungle was very thick and I daresay you may recollect how we disdaining the road the Pioneers made for us, leapt our horses over hedge and ditch. About 12 A.M. the order came that the Baggage was to go to the rear, officers fall in and then Halt, load. This looked like business. I am not going to attempt to describe the Battle of Chillianwallah. Suffice it that having loaded and fixed bayonets, we formed in line in front of a nasty looking jungle and waited impatiently the order to advance on the enemy whose guns were sullenly booming out their defiance apparently some little distance ahead of us and to our right. Now and then a round shot came crashing through the low brushwood which surrounded us on all sides and fretting us nearly to madness. At last came the order and with one wild ringing cheer we plunged into the jungle and advanced in line, file firing from right to left of companies being the order of the day, but, and now mark how singularly every particle of my dream was verified "the jungle being too thick to admit of our advancing regularly in line, the order was first given to form *sub-divisions* then *sections* and so we proceeded on. *Our light company had some little time before carried a mound* behind which was a small village and they now rejoined us. Was not every *bush* alive with their sharp shooters? Did not every little *hillock* pour forth its deadly fire? and was not the ground exactly as I had stated? All who were there will corroborate this. So we went on when suddenly Becher came up to me saying poor Nightingale is shot *through the head*. Then and for the first time for many days my dream recurred to my recollection and when I looked round even while the bullets were falling like hail around me and the angry yell of the Khalsa mingled with the brave hurra of our advancing columns, the extraordinary identity of everything with my dream, bewildered and confused me. It was exactly as I had described and so many said to me after the battle.

I will not recall my sensations, my dear old friend when I first saw you stretched on the ground and to all appearance dying, but I shall never forget the first words you uttered on recognizing

me were "Your dream! Your dream!" Thank God you have miraculously recovered and will I trust live many a long year to talk and laugh over the matter.

And so ends my tale. Many will authenticate it word for word as I have described it. As it was the first so may it be the last of the sort I shall ever have.

Ever my dear Nightingale,
your attached friend,

C. MACDOWELL.

March 14th, 1851.

(NOTE.—The "Nightingale" to whom this letter is addressed obtained his commission in the 2nd European Regiment in the early forties, and was severely wounded in the head at the battle of Chillianwallah.

It has not been possible to trace "Macdowell" the writer.—
EDITOR.)

REVIEWS.

Robert Lee the Soldier. BY MAJOR-GENERAL SIR FREDERICK MAURICE, K.C.M.G., C.B. (Constable & Co., London, 25), Rs. 11-4.

The History of the Lee family must greatly delight the biologist and the Eugenist. Through many generations it gave Governors, and Generals and Judges to its countrymen of incorruptible integrity and strong character. And just as we claim George Washington and Abraham Lincoln into the Anglo-Saxon brotherhood and feel a pride in their achievements so may we claim Robert Lee one of the finest types in history and endowed to a peculiar extent with that combination of qualities the Englishman admires so greatly—courage, sincerity, and modesty. He is, however, but little known in England except as Jackson's Chief in Henderson's celebrated monograph; and the average English reader will seize upon the book mainly because it will carry on the story of the Civil War from the death of Jackson to the surrender at the appommatox.

General Maurice deals with the operation in a lucid narrative which includes a running commentary on their direction. We can follow and agree with him in all his praise which is considerable and in all his strictures which are few, except as regards the two important series of events that ended the war at Sharpsburg and the other at Gettysburg. In these campaigns the Confederate Army had no definite objective exposed its lines of communication and, on the march to Gettysburg, dangerously disseminated its forces. Such faults of leadership merit and generally meet with punishment. General Maurice, however, considers the advances into Mary Land to have been sound and gives reasons for his opinion, but his arguments are singularly unconvincing. Otherwise the book is full of valuable and suggestive criticism and furnishes a delightful study. We may fitly close the review with an extract from the John Wise's description of Robert Lee quoted by Mary Johnston.

"There was nothing of the pomp and panoply of war about his headquarters.....Persons.....were treated like human beings and courtesy, consideration and even deference were shown to the humblest.....He appeared to have no mighty secrets concealed

from his subordinates. He assumed no airs of superior authorityWhatever greatness was accorded to him was not of his own seeking.....but the impression he made by his presence.....can be described by no other term than that of grandeur.....The man who could so stamp his impress upon his nation.....and yet die without an enemy; the soldier who could make love for his person a substitute for pay and clothing and food, and could by the constraint of that love hold together a naked and starving band and transform it into a fighting army.....such a man, such a soldier.....must have been great indeed."

The Complete Guide to Military Map Reading (Gale and Polden's, 25. 3s/6d.).

This guide appears to be designed purely as a cram book for the British First Class and Special Certificates of Education, the examinations for which are purely theoretical and conducted indoors. For this purpose the questions and answers will be found useful.

Although called a "Complete Guide" however, the book will not be found of much assistance in teaching map reading out of doors.

There is, for instance, no mention of marching by compass at night or in fog or smoke, nothing about the liquid compass, which is rapidly replacing the dry pattern, and many other practical details to be found in the *Manual of Map Reading and Field Sketching*.

The Great Pacific War, BY HECTOR C. BYWATER. (Oxford University Press, Bombay, 10s.6d).

The author is an Associate of the Institute of Naval Architecture and an Associate Member of the U. S. Naval Institute. He has closely studied the problems of warfare in the Pacific, and has already published a book on the subject, "Sea Power in the Pacific."

The present book gives his forecast of a possible future war between the United States and Japan, deliberately provoked by the latter. It is cast in the form of a historical novel, it is full of exciting incident and the story never flags.

The abortive Bonin expedition was a violation of all sound rules of strategy, and was rightly defeated. The United States

Cabinet however had the plan strongly recommended to them by their Chief of Naval Operations. It was not a plan forced by civilians on reluctant naval authorities, however much many senior naval officers disliked it. So the Cabinet can scarcely be blamed for adopting it.

The final success of the United States in this story may largely be attributed to two factors :

- (a) the renaissance of China under a strong central government, and its hostility to Japan, and
- (b) the remarkably lucky exploits of its 'dummy' battle-ships.

It is interesting to note that the author presupposes the unrestricted use of gas on both sides from the commencement of hostilities.

The story has been carefully worked out, and presents the numerous factors affecting a struggle between two Great Powers in the Pacific in a most interesting form. Its study will repay anyone who wishes to grasp the problem of war in the Pacific.

The Fighting Forces (Gale and Polden, 5/- quarterly),
September 1925.

As its name indicates, this Magazine is intended to cater for the tastes and interests of the three services. The range covered by the articles in this September number is broad, and includes both serious contributions and short stories. The accounts of the Naval Battles of the British Army and of the Australian Railways are of particular interest. The former gives the many occasions on which British Regiments have been present at fights at sea, and shows how the memory of these fights is perpetuated by the Regiments in question. In the latter, the present railway situation in Australia, and the situation to be aimed at, are discussed from a strategic point of view. The article brings home very clearly the difficulties under which that Dominion labours, and the desirability of a co-ordinated plan of railway construction to meet any possible danger of invasion.

The Magazine is well printed and arranged and the few illustrations are clearly reproduced. It is a production that would be of value in a Mess.

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| *1. Major-Genl. Sir G. N. Cory, K.B.E., C.B., D.S.O. | *4. Major G. de la P. Beresford, M.C. |
| *2. Major H. G. Martin, D.S.O., O.B.E., M.A. | *5. Col. on the Staff R. J. Collins, C.M.G., D.S.O. |
| *3. Major-Genl. H. E. ap R. Pryce, C.B., C.M.G., D.S.O. | *6. Colonel J. H. F. Lakin, C.S.I. |
| | *7. Major-Genl. C. A. C. Godwin, C.M.G., D.S.O. |

* Members of the Executive Committee.

Additional Members of the Executive Committee.

1. Group Capt. J. A. Chamier, C.B., C.M.G., D.S.O., O.B.E.
2. Major C. M. S. Manners, D.S.O., M.C.
3. Major N. M. Carruthers.
4. Captain J. G. Smyth, V.C., M.C.
5. Major E. M. Little, O.B.E., R.A.

SECRETARY & EDITOR

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(COX'S AND KING'S BRANCH), SIMLA.

1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed inside front cover.
3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.
4. There is a well stocked library in the Institution, from which members can obtain books on loan free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V.-P. for the postage.
5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members but ordinary members wishing to have their Journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.
6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found in para. IV, Secretary's Notes.
7. **Members are responsible that they keep the Secretary carefully posted with regard to changes of address.**
8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months

United Service Institution of India.

APRIL, 1926.

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I.—New Members.

The following new members joined the Institution from 1st December 1925 to 28th February 1926.

Life Members.

Lieut. H. W. Spurrell.

Captain W. M. Broomhall.

C. Rajagopalan, Esq.

Ordinary Members.

Captain H. D. T. Morris.
 Major E. G. Hume.
 Lieut.-Colonel P. H. H. Preston.
 Captain A. B. Barltrop.
 Major G. B. St. P. Bunbury.
 Captain D. J. Bryce-son.
 Major H. B. Davidson.
 Colonel on the Staff G. C
 Sturrock.
 Captain W. L. Farwell.
 Captain A. E. Sansom.
 Lieut. L. M. H. Benn.
 Captain D. M. Williams.
 Major H. Finnis.
 Captain J. A. McLaren.
 Captain A. E. Barlow.
 Lieut. M. C. R. Garraway.
 Captain H. Pigot.
 Captain G. C. Winckley.
 Lt.-Col. A. B. Beauman.
 2/Lieut. Sant Singh.

Captain C. P. Clarke.
 Captain W. L. Alston.
 Major J. W. L. S. Hobart.
 2/Lt. Sirdar Mehtab Singh
 Khurana.
 Captain D. M. Ham.
 Lieut. M. C. Frye.
 Lieut F. R. L. Goodby.
 Colonel-Comdt. D. I. Shuttle
 worth.
 Captain G. F. Ellenberger.
 Captain T. M. Lunham.
 Lieut. J. V. Topham.
 Major E. H. Pott.
 Lieut. M. Duke.
 Flight/Lieut. G. O. Venn.
 Captain J. F. Bowtell-Harris.
 Flight/Lieut. A. C. Sanderson.
 Captain C. E. L. Harris.
 Captain H. A. Oatts.
 Lieut. R. B. Aldridge.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library. The following list of books may be found useful for reference by officers studying for Promotion Examinations or entrance to the Staff College.

The lists of books presented and purchased as shown in the current year's Journals should also be consulted.

The special periods of military history for future Promotion Examinations are as follows (*vide* I. A. O. 409 and 493 of 1924 and I. A. O. No. 172 of 1925):—

| 1 | 2 | 3 | 4 | 5 |
|------------|----------------------|--|--|---|
| Serial No. | Date of examination. | Campaign set for the first time. | Campaign set for the second time. | Campaign set for the last time. |
| 1 | October 1926... | Campaign of the British Army in 1914 in France and Belgium from the outbreak of hostilities up to and including the operations on 9th Sept. 1914. | ... | Operations in Waziristan 1919-20. |
| 2 | April 1927 ... | Campaign of the British Army in Mesopotamia, 1916-17, under General Maude, from his accession to command to his death. Questions may be set on events leading up to the inception of the campaign, and the general conditions under which the Expeditionary force was despatched and reinforced also on the conditions of the country and climate as affecting operations. | Campaign of the British Army in 1914 in France and Belgium. General period from commencement of hostilities to the end of the battle of the Aisne. Special period from 18th August to 31st August (Battle of the Marne). | |
| | October 1927... | ... | Mesopotamia (as given in Serial 2, Column 3). | France 1914 (as given in Serial 2, Column 4). |
| 4 | April 1928 ... | To be notified later. | ... | Mesopotamia (as given in Serial 2, Column 3). |

The following Extract of Army Council Instructions, issued for week ending 7th January, 1925, is printed for the convenience of candidates.

* * * * *

4. Examination of Officers for Promotion—Military History

1. With reference to A. O. 464 of 1924, * * *

2. In * * April, 1926, the periods of the Russo-Japanese War for examination will be altered to the following:—

(a) General period from 1st May, 1904 (Battle of the Yalu), to 5th September, 1904, both dates inclusive.

(b) Special period. The Battle of Liao-Yang, 23rd August to 5th September, 1904.

3. Candidates will be required to have a knowledge of the tactics employed in the special period, while questions in the general period will be mainly of a strategical nature.

4. Normally 75 per cent. of the question for captains will be taken from the general period and 75 per cent. of the questions for lieutenants from the special period.

5. Both periods will be included in a single three-hour examination paper.

TANKS.

The following notes re Tanks have been received from the General Staff:—

Information has been received that if the use of Light Tanks is involved in any questions set in forthcoming examinations before the revised editions of Cavalry and Infantry Training (Vol. II) are issued, the necessary data regarding the characteristics and performance of the Tanks will be given with the questions.

The following official information regarding the Light Tank is, however, given below for the benefit of officers working for examinations:—

Armament—One 3-pdr. gun, two Vickers guns, three Hotchkiss guns (one for A/A work and one spare).

Average speed of a company of tanks by day; on a road—7—8 miles per hour.

Average speed of a company of tanks by day; cross-country (good going)—6—7 miles per hour.

Average speed of a company of tanks by night; on a road, with headlights—6 miles per hour.

Average circuit of action (cross-country)—135 miles.

Can cross track 6 feet wide.

Can climb verticle obstacle 3 feet high.

MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL HISTORY OF THE WAR.

Military Operations, France and Belgium, Vol. I (to October, 1914).

Ditto

ditto

Vol. II (to 20th November, 1914) (in Press).

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914 (General Maurice, new edition).

1914 (Viscount French).

My War Memories (Ludendorff).

General Headquarters, 1914—16, and its Critical Decisions (Falkenhayn).

The March on Paris, 1914 (Von Kluck).

Ypres, 1914. (An official account) (German General Staff.)

Oxford Pamphlets, August 1914. The Coming of the War. (Spencer Wilkinson).

Oxford Pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military, Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grobe Krieg: Die Schlacht bei Mons (German General Staff).

Der Grobe Krieg: Die Schlacht bei Longwy (German General Staff).

Story of the Fourth Army (Montgomery).

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNTS.

A Brief Record of the Advance of the Egyptian Expeditionary Force, 1919.

The Australian Imperial Force in Sinai and Palestine (H. S. Gullett).

The New Zealanders in Sinai and Palestine (Lt.-Col. C. G. Powles).

Yilderim (Dr. Steuber).

B.—OTHER BOOKS.

Allenby's Final Triumph (W. T. Massey).

How Jerusalem was Won (W. T. Massey).

Outline of the Egyptian and Palestine Campaigns, 1914—18
(Bowman-Manifold).

L'Attaque du Canal de Suez (Douin).

3. *The Gallipoli Campaign.*

Official Account: Official History of the War, Naval Operations,
Vols. II and III.

Gallipoli Campaign (Outline of Military Operations). By A
Student.

Official Despatches.

The Dardanelles (Callwell).

Experiences of a Dugout (Callwell).

Despatches from the Dardanelles (Ian Hamilton).

The Navy in the Dardanelles Campaign (Wemyss).

The World Crisis (Winston Churchill).

4. *The Russo-Japanese War, 1904, up to and including
the battle of Liao-Yang.*

A Staff Officer's Scrapbook (Ian Hamilton).

German Official Account.

Lectures on the Strategy of the Russo-Japanese War (Bird).

Question on the Russo-Japanese War (Brunker).

Official Account: The Russo-Japanese War (Naval and Military), 3 Vols., published by Committee of Imperial Defence.

Outline of the Russo-Japanese War (Ross).

A Study of the Russo-Japanese War (Chasseur).

My Experiences at Nan Shan and Port Arthur (Tretyakow).

Outline History of the Russo-Japanese War, 1904, up to the
Battle of Liao-Yang, with Questions and Answers (P. W.)

A short account of the Russo-Japanese War ("Footslogger").

An account of the battle of Liao-Yang (with questions and 10
maps for examination purposes) (Bird).

5. *Organization of Army since 1868.*

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue. Vols. I to XI.

Outline of the Development of British Army, by Maj.-Genl.
Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

B.—FORCES OF THE EMPIRE.

Notes on the land forces of the British Dominions, Colonies, Protectorates and Mandated Territories, 1925.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, *viz.*, R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

6. *Development and Constitution of the British Empire.*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The Government of the British Empire (Jenks, 1923).

The Foundation and Growth of the British Empire (J. A. Williamson, 1918).

The Beginnings of English Overseas Enterprise (Sir C. P. Lucas, 1917).

The British Empire Series. (XII volumes).

The Government of England (L. A. Lowell, 1912).

The Expansion of the British Empire (W. H. Woodward, 1921 and 1924 edition).

Overseas Britain (E. F. Knight, 1907).

The Origin and Growth of the English Colonies and of Their System of Government (H. E. Egerton, 1903).

A Short History of Politics (Jenks, 1900).

The English Constitution (Bagehot, 1909).

The Expansion of England (Sir J. Seely, 1883).

Introduction of the Study of the Law of the Constitution (A. V. Dicey, 1908).

England in the Seven Years' War (Sir J. Corbett, 1907).

Selected Speeches and Documents on British Colonial Policy, 2 Vols. (A. B. Keith, 1918).

B.—BOOKS ON SPECIAL PORTIONS OF THE EMPIRE OR WORLD.

The Rise and Expansion of British Dominions in India (Sir A. C. Lyall, 1894).

A Brief History of the Indian Peoples (Sir W. H. Hunter, 1907).

The Nearer East (Hogarth, 1902).
Modern Egypt (Cromer, 1908).
Egypt and the Army (Elgood, 1924).
The History of Canada (W. L. Grant).
Nova Scotia (B. Wilson, 1911).
Report on British North America (Sir C. P. Lucas).
The Union of South Africa (R. H. Brand, 1909).
Short History of Australia (E. Scott.)
History of the Australasian Colonies (Jenks, 1912).
The English in the West Indies (J. A. Froude, 1888).
The Lost Possessions of England (W. F. Lord, 1896).

7. *Military Geography.*

Naval and Military Geography of the British Empire (Dr
 Vaughan Cornish, 1916).
Elementary Imperial Military Geography (Capt. D. H. Cole,
 1924).
Introduction of Military Geography (Col. E. S. May).
Imperial Defence (Col. E. S. May).
Main Feature of the Japanese and other Pacific Problems.
 (Reprinted from "Morning Post." Sifton Præd.)
Britain and the British Seas (H. J. Makinder, 1907).
Military Geography (Macguire).
Imperial Strategy (Repington).
War and the Empire (H. Foster).
Historical Geography of British Colonies (Dominions), 7 Vols.
 (Sir C. P. Lucas, 1906—17)—

- Vol. 1, Mediterranean
- Vol. 2, West Indies.
- Vol. 3, West Africa.
- Vol. 4, South Africa.
- Vol. 5, Canada.
- Vol. 6, Australia.
- Vol. 7, India.

The Influence of Sea Power on History (A. T. Mahan, 1890).
Historical Geography of the British Empire (Hereford George).
The Mastery of the Pacific (A. R. Colquhoun, 1902).
Frontiers (C. B. Fawcett, 1918).

8. *Foreign Armies.*

OFFICIAL.

- * Handbook of the United States Army, 1924.
- * Handbook of the Army of the Netherlands, 1922.

9. *Tactical.*

Common mistakes in the solution of tactical problems and how to avoid them (Lieut.-Colonel A. B. Beauman, 1925).

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes or ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India. Members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

* NOT to be removed from the library.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased, and also a list of books useful to members studying for the Staff College and Promotion Examinations, will be found under Secretary's Notes in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

The catalogue completed to 31st March 1924 is now available. Price Rs. 3-8-0 or postage paid Rs. 3-14-0.

VII.—Gold Medal Prize Essay Competition, 1925-26.

The Council have chosen the following subjects for the Gold Medal Essay for 1925-26 :—

- (i) The effect of an efficient enemy air force on our strategy, tactics and communications if engaged in a major war on or beyond the N.-W. Frontier of India.

or

- (ii) Bearing in mind the responsibility of the British Government for the well being of the Empire as a whole, discuss the progressive steps to be taken to create an Indian Army commanded, trained and administered by Indians, and capable of affording that support to a self governed India without which she will be unable to take her place in the Empire on terms of co-partnership.

The following are the conditions of the competition :—

1. The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army and Royal Air Force or Auxiliary Forces who are members of the U. S. I. of India.
2. Essays must be printed or type-written and submitted in triplicate.
3. When a reference is made to any work, the title of such work is to be quoted.
4. Essays are to be strictly anonymous. Each must have a motto and, enclosed with the essay, there should be sent a sealed envelope with the motto written on the outside and the name of the competitor inside.
5. Essays will not be accepted unless received by the Secretary on or before the 30th June 1926.
6. Essays will be submitted for adjudication to three judges chosen by the Council. The decisions of the three judges will be submitted to the Council, who will decide whether the Medal is to be awarded and whether the essay is to be published.
7. The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1926.
8. All essays submitted are to become the property of the United Service Institution of India absolutely and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

9. Essays should not exceed 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,
E. J. ROSS, MAJOR,
Secretary, U. S. I. of India.

SIMLA :

1st October 1925.

VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the rate of Rs. 2 per manuscript or type-written page.

IX.—

Books Presented.

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|--------------------------------|
| 1. Disraeli the Alien Patriot ... (Presented by H o d d e r & Stoughton, London). | 1925 | E. J. Raymond. |
| 2. Report on the Staff Exercise, 10th to 14th November, 1924. (Presented by War O f f i c e, London). | 1925 | Official. |
| 3. The Pilgrim of Eternity. Byron— A Conflict. (Presented by H o d d e r & Stoughton, London). | 1925 | John Drinkwater. |
| 4. India in 1924-1925 ... (Presented by Government of India Publication Branch, Calcutta). | 1925 | R u s h b r o o k Williams. |
| 5. Annual Report of the Smithsoni- an Institution, 1923. (Presented by Secretary of the Smithsonian Ins t i t u t i o n, Washington). | 1925 | C. G. Abbott. |
| 6. Historical Illustrations to Field Service Regulations, Vol. II. (Presented by Sifton Press & Co., London). | 1926 | Major E. G. Eady. |

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|---------------------------------|
| 7. The Great Pacific War (Presented by Constable & Co., London). | ... 1925 | Hector C. Bywater. |
| 8. Report of the Mission to Lake Tana, 1920-1921. (Presented by the Ministry of Public Works, Cairo). | 1925 | W. B. Grabham & R. P. Black. |
| 9. How to Instruct in Aiming and Firing. (Presented by Gale & Polden, London). | 1926 | Major J. B. Bostock |
| 10. Examination of Officers for Promotion, October 1925. (Presented by War Office, London). | 1925 | Official. |
| 11. Handbook of the United States Army. (Presented by the Chief of the General Staff of India, Simla). | 1924 | Official. |
| 12. Handbook of the Army of the Netherlands. (Presented by the Chief of the General Staff of India, Simla). | 1922 | Official. |
| 13. Guide to First Class and Special Certificates Imperial Geogra- phy. (Presented by Gale & Polden, London). | n.d. | Gale & Polden. |
| 14. The Foundations of the Science of War. (Presented by Messrs. Hutchinson & Co., London). | n.d. | Col. J. F. C. Fuller. |
| 15. Elementary Tactics or the Art of War, British School. (Presented by Sifton Præd & Co.) | 1926 | Maj. R. P. Pakenham- Walsh. |

Books Purchased.

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|--|-------------------|----------------------------|
| 1. Annual Report on the Progress of Civil Aviation, April 1st, 1924. March 31st. | | Official. |
| 2. Twenty-Five Years | ... 1925 | Viscount Grey of Follodon. |
| 3. Callinicus | ... 1925 | J. B. S. Haldane. |
| 4. Simla Past & Present | ... 1926 | E. J. Buck. |
| 5. Seaborne Trade, Vol. I | ... 1920 | C. Earnest Fayle. |
| Seaborne Trade, Vol. II | ... 1923 | |
| Seaborne Trade, Vol. III | ... 1924 | |
| 6. Whitaker's Almanack | .. 1926 | |

X.—Pamphlets.

The following are available for sale on application to the Secretary :—

- (a) British and Indian Road Space Table (separately). Price as. 8 each, plus postage. It is suggested that these may be useful for staff rides, etc.
- (b) Diagram of Ammunition Supply (India). Price as. 4, plus postage.
- (c) Skeleton Diagram of Signal Communications of a Division. Price as. 6, plus postage.
- (d) Home War Establishment Tables (provisional). Price Re. 1-4-0 per copy, plus postage.

XI.—Schemes.

(i) The following schemes based on lectures given at the course for officers studying for the Staff College Entrance Examination, are now available for sale, on application to the Secretary :—

- (a) Mountain Warfare (with four problems). Price Rs. 4, plus postage.
- (b) Administration (with one problem). Price Rs. 2, plus postage.
- (c) Artillery (with one problem). Price Rs. 2, plus postage.

To save expense to officers, maps, other than sketch maps, are not being supplied by the Institute. It is thought that the maps required will be readily obtainable by students.

These are for (a) Survey of India maps of Waziristan and Baluchistan, and for (b) and (c) Map 1/100,000 Rheims (1st Training, for War Paper. Staff College Entrance Examination, 1924).

(ii) Three Tactical Schemes suitable for Promotion Examination are available. (Price Rs. 5 each, with maps).

(d) Captain to Major—2 Schemes.

(e) Lieut. to Captain—1 Scheme.

(iii) About 20 copies of the recent (February 1923) Staff College Examination papers are available.

Training for war papers with maps ... Rs. 5 each.

Other papers „ 3 „

XII.—Training Manuals.

The following new Training Manuals have recently been published at Home—

Machine Gun Training, 1925.

Infantry Training, Vol. II.

Field Service Pocket Book.

They will all be reprinted for issue in India but in the meanwhile can be obtained on payment from any of the big book-sellers.

XIII.—“Backward Boys.”

Staff College courses are again to be held this year at Army Headquarters and in the Commands.

It is understood that the Simla course will probably be held about July 15th as for last year.

United Service Institution of India.

Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay.)

- 1872..ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.
 1873..COLQUHOUN, Capt. J. S., R.A.
 1874..COLQUHOUN, Capt. J. S., R.A.
 1879..St. JOHN, Maj. O. B. C., R.E.
 1880..BARROW, Lieut. E. G., 7th Bengal Infantry.
 1882..MASON, Lieut. A. H., R.E.
 1883..COLLEN, Maj. E. H. H., s.c.
 1884..BARROW, Capt. E. G., 7th Bengal Infantry.
 1887..YATE, Lieut. A. C., 27th Baluch Infantry.
 1888..MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., 24th Punjab Infantry (specially awarded
 a silver medal).
 1889..DUFF, Capt. B., 9th Bengal Infantry.
 1890..MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.
 1891..CARDEW, Lieut. F. G., 10th Bengal Lancers.
 1893..BULLOCK, Maj. G. M., Devonshire Regiment.
 1894..CARTER, Capt. F. C., Northumberland Fusiliers.
 1895..NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.
 1896..BINGLEY, Capt. A. H., 7th Bengal Infantry.
 1897..NAPIER, Capt. G. S. F., Oxfordshire Light Infantry.
 1898..MULLALY, Maj. H., R.E.
 CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a
 silver medal).
 1899..NEVILLE, Col. J. P. C., s.c.
 1900..THUILLIER, Capt. H. F., R.E.
 LUBBOCK, Capt. G., R.E. (specially awarded a silver medal).
 1901..RANKEN, Lieut.-Col. G. P. P., 46th Punjab Infantry.
 1902..TURNER, Capt. H. H. F., 2nd Bengal Lancers.
 1903..HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.
 BOND, Capt. R. F. G., R.E. (specially awarded a silver medal).
 1904..MACMUNN, Maj. G. F., D.S.O., R.F.A.
 1905..COCKERILL, Maj. G. K., Royal Warwickshire Regiment.
 1907..WOOD, Maj. E. G. M., 99th Deccan Infantry.
 1908..JEUDWINE, Maj. H. S., R.A.
 1909..MOLYNEUX, Maj. E. M. J., D.S.O., 12th Cavalry.
 ELSMIE, Maj. A. M. S., 56th Rifles, F. F. (specially awarded
 a silver medal).
 1911..Mr. D. PETRIE, M.A., Punjab Police.
 1912..CARTER, Maj. B. C., The King's Regiment.
 1913..THOMSON, Maj. A. G., 58th Vaughan's Rifles (F.F.).
 1914..BAINBRIDGE, Lieut.-Col. W. F., D.S.O., 51st Sikhs (F.F.).
 NORMAN, Maj. C. L., M.V.O., Q.V.O., Corps of Guides (specially
 awarded a silver medal).
 1915..No Award.
 1916..CRUM, Maj. W. E., V.D., Calcutta Light Horse.
 1917..BLAKER, Maj. W. F., R.F.A.
 1918..GOMPERTZ, Capt. A. V., M.C., R.E.
 1919..GOMPERTZ, Capt. M. L. A., 108th Infantry.
 1920..KEEN, Lt.-Col. F. S., D.S.O., 2, 15th Sikhs.
 1921..No Award.
 1922..MARTIN, Maj. H. G., D.S.O., O.B.E., R.F.A.
 1923..KEEN, Colonel F. S., D.S.O., I.A.
 1924..No Award.
 1925..No Award.

MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June :—

(a) For officers—British or Indian—silver medal.

(b) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers and soldiers at the date of the Award.)

1889. . BAIL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890. . YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

* N.B.—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Indian Auxiliary and Territorial Forces and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

MacGregor Memorial Medalists—(contd.).

- 1891.. SAWYER, Major H. A., 45th Sikhs.
RAMZAN KHAN, Havildar, 3rd Sikhs.
- 1892.. VAUGHAN, Capt. H. B., 7th Bengal Infantry.
JAGGAT SINGH, Havildar, 19th Punjab Infantry.
- 1893.. BOWSER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
FAZALDAD KHAN, Dafedar, 17th Bengal Cavalry.
1894. O'SULLIVAN, Major G. H. W., R.E.
MULL SINGH, Sowar, 6th Bengal Cavalry.
- 1895.. DAVIES, Capt. H. R., Oxfordshire Light Infantry.
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
- 1896.. COCKERILL, Lieut. G. K., 28th Punjab Infantry.
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897.. SWAYNE, Capt. E. J. F., 10th Rajput Infantry.
SHAHZAD MIR, Dafedar, 11th Bengal Lancers.
1898. WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899.. DOUGLAS, Capt. J. A., 2nd Bengal Lancers.
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900.. WINGATE, Capt. A. W. S., 14th Bengal Lancers.
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901.. BURTON, Maj. E. B., 17th Bengal Lancers.
SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.
- 1902.. RAY, Capt. M. B. E., 7th Rajput Infantry.
TILBIE BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903.. MANIFOLD, Lieut.-Col. C. C., I.M.S.
GHULAM HUSSAIN, Lance-Dafedar, Q. O. Corps of Guides.
- 1904.. FRASER, Capt. L. D., R.G.A.
MOGHAL BAZ, Dafedar, Q. O. Corps of Guides.
- 1905.. KENNICK, Maj. F., 40th Pathans (specially awarded gold medal).
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906.. SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.
GHAFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.
- 1907.. NANGLE, Capt. M. C., 92nd Punjabis.
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908.. GIBBON, Capt. C. M., Royal Irish Fusiliers.
MALANG, Havildar, 56th Punjab Rifles.
- 1909.. MUHAMMAD BAZA, Havildar, 106th Pioneers.

MacGregor Memorial Medalists—(concl'd.).

- 1910.. **SYKES**, Maj. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).
TURNER, Capt. F. G., R.E.
KHAN BAHADUR SHEER JUNG, Survey of India.
- 1911.. **LEACHMAN**, Capt. G. E., The Royal Sussex Regiment.
GURMUKH SINGH, Jemadar, 93rd Burma Infantry.
- 1912.. **PRITCHARD**, Capt. P. P. A., 83rd Wallahabad Light Infantry (specially awarded a gold medal).
WILSON, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.
MOHIBULLA, Lance-Dafedar, Q. V. O. Corps of Guides.
- 1913.. **ABBAY**, Capt. B. N., 27th Light Cavalry.
SIRDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.
WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).
- 1914.. **BAILNY**, Capt. F. M., I.A. (Political Department).
MORSHEAD, Capt. H. T., R.E.
Haidar Ali, Naik, 106th Hazara Pioneers.
- 1915.. **WATERFIELD**, Capt. F. C., 45th Battray's Sikhs.
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916.. **ABDUR RAHMAN**, Naik, 21st Punjabis.
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).
- 1917.. **MIAN AFBRAZ GUL**, Sepoy, Khyber Rifles.
- 1918.. **NOEL**, Capt. E. W. C. (Political Department).
- 1919.. **KEELING**, Lt.-Col. E. H., M.C., R.E.
ALLA SA, Jemadar, N.-E. Frontier Corps.
- 1920.. **BLACKER**, Capt. L. V. S., Q. V. O. Corps of Guides.
AWAL NUR, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides.
 (Special gratuity of Rs. 200.)
- 1921.. **HOLT**, Major A. L., Royal Engineers.
SHER ALI, Sepoy No. 4952, 106th Hazara Pioneers.
- 1922.. **ABDUL SAMAD SHAH**, Capt., O.B.R., 31st D. C. O. Lancers.
NUR MUHAMMED, Lance-Naik, 1st Guides Infantry, F. F.
- 1923.. **BRUCE**, Capt. J. G., 2, 6th Gurkha Rifles.
SOHBAT, Head Constable, N.-W. F. Police.
HABI SINGH THAPA, Survey Department.
- 1924.. **HAVILDAR RAHMAT SHAH**, N.-W. F. Corps.
NAIK GHULAB HUSSAIN, N.-W. F. Corps.
- 1925.. **SPEAR**, Captain C. R., 5/13th Frontier Force Rifles.
JABBAR KHAN, Naik, 5/13th Frontier Force Rifles.

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EDITORIAL.

No serious student of military matters can fail to be deeply interested in the rapid strides made in mechanicalisation during the last few years and the progress of the Tank since the war is especially remarkable. The latest development is the "One man tank" about which a certain amount has been written in the newspapers lately and which appears likely to assume great importance in the near future.

From very early times the problem of the attacker has been to reach his objective with the smallest possible loss and, as one means of protected movement was invented, it was countered by some other weapon which in the hands of the defender could break through this protection.

The means of protection sought by the attacker has been either by armour, speed or dispersion or by a combination of these methods.

The Knight in Armour fell before the arrow of the bowman; the attack in mass formation withered before the power of the modern bullet and shell and necessitated dispersion and extensions; the stopping power of machine guns and barbed wire led to the introduction of the tank, and the anti-tank gun and the armour piercing bullet have again necessitated dispersion behind protective armour—hence the one man tank—or the Knight in Armour once again.

The "one man tank" or to give it a better name "the infantry tank," as it is by no means certain that it should not preferably be manned by two men, is as yet in its infancy but

whatever else its uses may be, it does appear that its introduction would help to solve that difficult problem of the method of transportation of a small body of infantry to accompany a mobile mechanical column. Up to the present they have had to be carried in lorries and been tied to the roads, which reduces considerably the mobility and striking power of such a column.

The very great moral effect of tanks generally is apt to be lost sight of in peace time.

It may be argued that the infantry battalion is already overburdened with weapons and that it cannot be saddled with an anti-tank gun in addition but, if the European nations are going on developing and increasing their tanks at their present rate, an infantry gun per company will be essential or we cannot ask of our infantry that "defence to the last round and the last man" which we do at present. An artillery anti-tank gun somewhere at the back or to a flank is not quite the same thing.

* * * * *

Now that the lessons of the last manoeuvres at Home and in India can be examined in more detail it is interesting to note that the following points came out prominently at both.

- (a) Air reconnaissances are not infallible and must be checked by ground reconnaissance.
- (b) The excellent concealment of troops halted from air observation.
- (c) The admirable spirit and marching power of the troops.
- (d) The rather excessive length of the marches—especially those conducted at night.
- (e) The importance of good umpiring.

As regards the two latter—Financial consideration will only allow a few days for manoeuvres and there is always a tendency, owing to the keenness of both commanders and troops, that these few days should be intensive to an extent which could never really obtain in war.

Naturally everyone wishes to crowd as much as possible into the short period available but it must be remembered that, in continuous warfare, the physical and mental strain of successive long marches, most of them at night, would be very great and no infantry in the world could keep them up for very long.

The importance of good umpiring has now been fully realised. The days are gone when only those officers were taken as umpires who were not wanted elsewhere; they are now

carefully selected and trained and, in the Northern Command manoeuvres in India, carried out a preliminary staff ride on the manoeuvre scheme which was of the greatest assistance in enabling them to get a knowledge of the country and to foresee the various situations which were likely to arise.

Good umpiring can help enormously to make manoeuvres realistic and to paint into them the picture of war.

* * * * *

The controversy which has been going on in recent numbers of the Journal on the subject of the R. A. F. and Army Co-operation has been of great interest and this number contains a very well-written article by a Royal Air Force officer giving "The other point of view."

We cannot help thinking that people are apt to get the false impression that an airman can get a panoramic view of a modern battle which is taking place on the ground. Those who have had experience of air observation will know that this is far from being the case. As well might one expect a cavalry reconnaissance to give an accurate picture of the enemy's dispositions and movements over a wide area.

Such reconnaissances, both by aeroplanes and cavalry, will, at the best, only give answers to certain definite and limited questions and, from the little bits of information so gained, and confirmed from other sources, the Commander on the ground gradually pieces together his picture of the battle.

Even in such an open locality as Salisbury plain, the absence of this panoramic view of movements known to be taking place in a certain area, is remarkable.

Every year troops are becoming more skilful in taking cover from the air and will only be picked out by the skilled observer in constant practice.

Another fallacy which should be laid bare is that an Army officer after very little flying experience can go up into the air and pick out troops on the ground with greater accuracy than the trained R. A. F. officer.

We do not wish to insinuate for one instant that Army officers should not fly. Flying experience is most desirable for all Army officers and a Staff officer with considerable flying experience and a knowledge of the capabilities and the limitations of the aeroplane, must be of great value in war—provided that he can get opportunities to keep up his flying in peace time.

It cannot but be an asset to any commander to have on his staff an officer trained in air observation who can go up and confirm a particularly important bit of information, but to expect such an officer to go up and give him a general picture of a mobile operation taking place in a wide area is absurd and cannot be carried out by him, any more than it can be by a R. A. F. officer.

We cannot help feeling that the argument so often put forward lately that observation and artillery shoots from Army Co-operation machines should be carried out by Army and not R. A. F. officers is an unsound one.

Should we ever be able to spare sufficient Army officers, with the necessary reserves to replace casualties, to be trained in these duties in peace time and would it not really be better to spend our time in helping the R. A. F. officer to get a better knowledge of the difficulties and requirements of the man on the ground and leave him to carry out the job?

And again—can a battery be efficiently *commanded* from the air? If the air gave one a clear picture of events happening on the ground it certainly could, but, as it is, there would be considerable danger of the battery being switched on to targets which were only of secondary importance to the troops on the ground.

Great difference of opinion exists on these matters but close liaison between the two Services is the great thing and this can only be obtained by constant interchanges of officers, by attachments, and mutual understanding of one another's difficulties.

The institution of a War College consisting of graduates from the Staff Colleges of all three Services would be a great help in thrashing out these problems—perhaps such a college may be instituted in the not too distant future. A step in this direction has been made by the admission of officers of the other Services to the Staff Colleges. We cannot, however, agree with the writer of the article in the present number on "The other point of view" that R. A. F. pilots should not specialise in Army co-operation work. If co-operation between ground and air is to be carried on with the maximum degree of efficiency in war, the Army co-operation squadron must be accustomed to working with the division to which it is attached and the pilots should not only have an intimate knowledge of Army Co-operation work

but a personal knowledge of the Divisional Commander and Staff and the staffs of the Brigades, both infantry and artillery, with which they will have to work.

Only thus will mutual confidence and smooth working be established and it is difficult to see how this object can really be obtained without the formation of an Army Wing of the R. A. F., administered by the Air Ministry, but controlled by the War Office for training and operations.

* * * * *

There seems to be a universal demand among officers working in India for Staff College and promotion examinations for tactical schemes to practice on.

We propose to gradually increase the present stock kept on charge of the Institution and, for a start, have added about 20 copies of this month's Staff College examination papers.

These include all the subjects both obligatory and optional and the papers may be obtained on application as announced in the Secretary's notes.

LECTURES ON THE MANCHURIAN BATTLEFIELDS, III.

[Delivered by Lieut.-Colonel G. de S. Barrow (now General Sir G. de S. Barrow, K.C.B., K.C.M.G., A.-D.-C.), at the Staff College, Quetta, in March, 1914.]

(These lectures have not been revised in any way except to bring references to F.S.R. up to date with the 1924 edition.)

TASHIMON LING.

After riding out to the pass, 12 miles from Liaoyang, I walked up the high peak 1,700 immediately to the East, and from here obtained a fine view of the country and the valley of the Tan-ho right away to the Taitsu-ho.

This is the way the 3rd (Matsunaga's) Brigade came. The Brigade failed to co-operate successfully with the attack of the 2nd Guard Brigade on 29th August, owing, apparently, to a staff omission to place it for this purpose temporarily under the orders of the Commander of the Guard Division.

The impression gained by looking at the map is that the mountainous nature of the country through which the 1st Army moved must be a very valuable asset to the attackers. All his troops would be swallowed up in these mountains and valleys and it would be impossible to gain any information of the strength of his columns, their lines of advance, the positions of the flanks or of any wide turning movements. And one's natural inference is that such a tract of country in front or on the flank of a defensive position, where large forces are engaged, must be a grave disadvantage to the defender, strategically and tactically.

But it is just here that we see the danger of generalizing from a specific case.

These mountains are in general form and appearance somewhat similar to, though nothing like so high as, the hills beyond Simla; the valleys between them, however, are more marked, broader and easier for the movements of troops. It would have been comparatively easy for the Russians to establish observa-

tion posts commanding all the valleys, and the reconnaissance of the Japanese might well have been entrusted to the Russian cavalry which was standing idle.

A brigade up the valley of the Taitsu, a brigade up the valley of the Tan-ho, and a regiment through Wanbatai, with men piqueting the heights between, and touch could have easily been maintained with the enemy. Far from the country being difficult for cavalry as one would judge from the map, it is very suitable. Mounted columns could trot along anywhere through the valleys, with little danger of being cut off. And, had it been employed in this manner, Kuropatkin would have made a truer estimate of the strength of Kuroki's force, which was across the river on the 1st September and subsequent days; and surely one may assume that under these circumstances he would have shown more of that boldness which was alone wanting to bring him success. No longer would fear for his communications produce that fatal paralysis, which on every occasion, when his arm was lifted to strike, caused it to fall helpless to his side.

Even had the country been more difficult than it was, it would have been well to employ the cavalry there in order to carry out its legitimate rôle. The losses, however, might have been greater than were incurred when employed as it actually was. We have seen that at Tashichao Mischenko's losses were nil, at Liaoyang he was less fortunate: he had one man wounded.

In curious contrast with the ease with which the cavalry could have reconnoitred through the mountainous country, were the difficulties which confronted it in the plains, as was seen later in Heikoutai and on the West flank during the days preceding and following that battle. Here the difficulties were very real, for the villages held by the Japanese were at a distance which enabled the ground between to be covered with rifle fire, and rendered it well nigh impossible for bodies of cavalry, large or small, to break through and return with any hope of success, unless with a strong backing of the other arms. A good object lesson is here obtained of how misleading a conclusion one may arrive at by a mere glance at the map, as regards the influence of the ground on one's plans and on the disposition of one's forces. The necessity of personal reconnaissance is duly inculcated in our Field Service Regulations, and, where space and time permit, nothing can replace it. And

when space is too great, or time too short, for a detailed examination of the ground, my observation of the Manchurian, as well as of the 1870 battlefields, has impressed on my mind the enormous benefit afforded to a commander by even the most cursory survey of the ground over which he is about to fight, provided this survey is not localized and is sufficiently general.

The advantages to be gained by signalling, and which were lost to both sides for lack of adequate organization and training in this branch, are evident at every turn in these mountains.

Before proceeding further, it is as well to consider one or two strategical and psychological questions which had immense influence on the war, especially during the period of what may be called the Greater Battles.

War to be successful, *i.e.*, war carried on by civilized nations on a large scale, must be methodical and the larger the masses employed the more methodical it requires to be. This is because the friction to be overcome in the employment of large masses increases in ever increasing ratio to their size. Now, the Russians did not carry on this war methodically for two reasons—

- (1) The forces were not suitably grouped.
- (2) Whatever plan there was varied from time to time, and was frequently changed even during actual execution.

As regards the grouping of the forces, instead of these being divided into permanent armies, there were Eastern detachments and Western detachments, and extreme flank detachments made up on the spur of the moment. The consequence of this was that commanders, troops and staffs, did not know each other: it must have been impossible to allocate the staff work suitably, and what was even more serious, the Commander-in-Chief felt justified in taking away from one detachment and adding to another, even during the actual progress of the battle. Thus no commander of a detachment ever knew where he was as regards the forces under his command.

Then we can imagine the strain on the services of supply, medical, and ordnance, consequent on these frequent alterations. Had the Russian forces been grouped into definite armies, as with their opponents, the temptation of the Commander-in-Chief to interfere with the disposition of the lesser formations would

have been minimized, the strain of trying to deal personally with twelve or more fighting units would not have been imposed, and the whole machinery would have worked more regularly, with simpler orders and a stronger chain of responsibility.

And as regards the plan, no man in private life can be methodical or business-like if he is constantly changing his plans or allows them to be interfered with by every passing shower; and it is likewise in war.

Closely connected with this question of methodism is that of initiative. Although nourished on the strong meat of the initiative, the Japanese did not confound initiative with hurry or aimless advance. They wanted to be sure of their object, and that, when they struck, it should be with most chances enlisted in their favour. Initiative is a grand thing—we all worship it; but it does not mean rashness or fool-hardiness, or rushing forward without a definite object.

In military matters, people often accept all sorts of terms and phrases without really proving them to the bottom and getting to understand them. We talk glibly of “seizing the initiative,” of “strategic advanced guards,” of “pivots of manœuvre,” of “defensive positions,” of “independent cavalry,” of the “French method” and the “German method.” How many of us really know what we are talking about!

I am not trying to belittle these terms of military nomenclature; they have their uses the same as badges of rank, shoulder straps and aiguillettes, and other things. What I mean is that we must not think that these things constitute strategy any more than that we must consider uniform makes a soldier.

Now, although we blame chiefly the Commander-in-Chief for want of method in the conduct of this war, it is really equally a question of national characteristics and training.

The Japanese were extraordinarily methodical in their conduct of the war, and they are a methodical people. They grouped their forces with commendable foresight, adopting each formation to the task before it; and, having made a plan, they stuck to it throughout, without wavering a hair's breadth, in spite of all sorts of unforeseen difficulties, miscalculations (of the capacity of the carrying power of the Manchurian railway for instance), terrible weather and transport difficulties, and a most stubborn fighting opponent.

Was this entirely due to the fact that Oyama was more methodical than Kuropatkin? No: it was because the Japanese are methodical by nature, they had foreseen and arranged for this war in the days of peace, instead of trusting to luck when the time came, they had trained their troops uniformly and methodically and in accordance with a doctrine—a doctrine which, if sometimes pushed to undue limits, was triumphant by reason of the unanimity with which everyone imbued with its precepts worked in one common spirit towards one common end.

WATANABAYAMA AND WAITOSAN.

The mountains in this portion of the scene of conflict are passable everywhere, and the valleys are easy and traversable by all arms. Nevertheless, movement must be slow, and without good signalling arrangements which neither side possessed, control must be difficult. From the top of Watanaba-yama and Waito-san, one sees range after range of hill tops to East and West and the extent of this battle (the Shaho) is brought home to one. The battles of the American Civil war and of the Franco-German conflict are dwarfs, as regards the area of country fought over, compared with this and the other great battles of the Manchurian War.

Under the conditions of space, it seems unlikely that a Commander can do more than initiate his plan from the first, and trust thereafter to bold aggressive action in order to compel success.

Over such an extensive field, the maintenance of a good system of inter-communication is of the first importance, and this holds good even if there be little chance of modifying one's original plan, or of executing battle manœuvres when once the opposing forces are joined. For knowledge gives confidence, whereas lack of information causes wearing anxiety to a commander, and this almost invariably leads to a weakening of his resolution.

Are battles of the extent of that of the Shaho to be considered the normal extent of the mass battles of the future? We do not think that it is necessarily so, except where two nations in arms stand face to face. In this battle the extension on both sides was excessive.

We see this by the fact that before a shot was fired Kuropatkin was forced to use up a portion of his reserve merely to fill a gap in the centre of his line. And the Japanese, having

"put in" their last man, were sore perplexed to maintain their fronts, holding the line in parts with long strung-out brigades, devoid of reserves, and offering opportunity to the Russians of success by means of a determined "push" at almost any part of the battlefield.

Temple Hill (Terra-yama), Sankeiseki-san, Putiloff Hill, Novgorod Hill, Hutai, there is nothing particular to be said about those, beyond what is already to be found in the various histories and accounts of war. The valour with which they were attacked and defended gives them a national and sentimental interest, and invests them with a glamour similar to that possessed by the Lucknow Residency or Saragheri. The points which would be of real interest to us to learn, from a purely educational point of view in connection with these places, are the tactical formations adopted by the attackers, and how far these formations coincided with the principles on which the troops had been trained. What measure of the success obtained is due to the training in fire discipline? In short, what was the mechanism of the attack? Or was there no mechanism? Our combined Naval and Military history dismisses the whole question airily with the remark, the gist of which is, that after all, these things don't matter much, as the one important thing is the spirit of the troops, and the determination to win. It would, of course, be a simple thing to settle every military problem, strategical and tactical, by the employment of a similar platitude. Everyone knows that the form without the spirit profiteth nothing. At the same time, we cannot neglect the form or treat it as of no importance; if it were so, all peace training would be valueless.

It is worth while noting the position of a Russian battery on the West spur of West Sanjoshishan. Well sited and having several small false crests in front, the Japanese, in spite of continued effort, were unable to locate it, and it did a great deal of damage. It is an example of what occurred several times during the war when a well placed battery or artillery brigade caused much more trouble to the enemy than larger masses of guns. It appears that good siting gives a value to guns out of all proportion to the numbers.

I saw at the Shaho, as well as on other battlefields, many trenches, made by the Japanese, but with the exception of Toshan and West of Mukden, none were made during the actual attack on a position. On the other hand, I saw trenches made by the

Japanese on almost every position captured by them. Frequently trenches of defenders and captors are to be seen on the same position. (F. S. R. II, S. 79, p. 9.) Nearly all the trenches constructed in the hills still remain clearly defined, and in many cases almost intact. Only in the plains has the plough and harrow obliterated most of them.

The object of Bilderling's slow "entrenched" advance, of which there are still a few traces left, was apparently to "wait" on that of the Eastern detachment which had much further to go, while at the same time being prepared to meet any forward movement from the Japanese side.

Whatever the advantages of a methodical advance might have on this flank, the fact remains that it must serve as a warning to the Japanese. A movement of this nature, against such opponents as the Japanese, was like asking to be attacked and lessened materially all chances of surprise.

It would have probably been better to have held the Western detachment back altogether at first, and then made the necessary ground by a forced march of 20 miles or so, with a view to getting in contact with the Japanese, simultaneously with Stackelberg's attack in the East.

WULITAITSY.

How was it that one Russian regiment and a battery, succeeded in holding in check, for so long, one whole Japanese division, when on other occasions throughout the war the Japanese were successful over and over again in the face of opposition far more formidable, both as regards position and relative numbers ?

One looked in vain for an interpretation in the nature of the country over which the attack took place, or in the conditions under which it was conducted. It was one of those things in war which, unless one is behind the veil, is inexplicable.

Was this the result of some misunderstanding between the commanders, between the advanced guard and the flank detachment ? Or was it that the men were near the end of their tether ? Even bravery can become stale and require time to recoup.

" For the sword wears out the sheath,
And the soul wears out the breast,
The heart must pause to breath,
And ' valour ' itself have rest."

PENSIHU.

From the heights above Pensihu, one obtains a fine view of a great part of the country through which Stackelberg's Eastern detachment marched to the attack of the Japanese right. The importance of Pensihu lying at the junction of several valleys is evident.

Does not the fighting along these hills in this, which was for a time at any rate, the decisive part of the battlefield, illustrate the correctness of Napoleon's maxim which says "In mountain warfare (between civilized forces understood), he who attacks is at a disadvantage even in offensive war. The spirit of this war consists in occupying positions either on the flanks or in rear of the enemy which only leaves him the alternative of evacuating his position without fighting in order to take up another in rear, or of issuing from them in order to attack you." And we find the same idea in the Writings of Napier. "Noting the skill and tenacity with which Massena and Ney clung to every league of ground and every ridge defensible against superior number, he seized the higher slopes of the mountain by Picton's flank march on the 13th and by Cole's on the 14th, and thus continually menacing the passes in rear of the French, obliged them to abandon positions which could scarcely have been forced, and this method of turning the strength of the country to profit is the true key to mountain warfare. He who receives battles in the hills has always the advantage and he who first seizes the important points chooses his own field of battle." (Napier XII, 4).

Here, on these hills round Pensihu we see three Russian army corps and a large body of cavalry held at bay by two Japanese infantry brigades.

Literally, the Russians had surprised the Japanese. A surprise, however, quickly ceases to be a surprise if advantage is not immediately taken of it. Had Stackelberg, mindful of Napoleon's above quoted maxim, at once proceeded to attack in front, say, with the I Siberian Corps and the 5th East Siberian Division, and at the same time sent the III Siberian Army Corps, assisted by Rennenkampf, round the extreme flank of the Japanese, with orders to occupy the ground south of Pensihu, the result can hardly be doubtful. Instant retreat or annihilation would have been the alternatives for the

brave Japanese in this part of the field, and the consequent exposure of the line of communication of the 1st Japanese Army. Who can tell what far-reaching results this might not have led to? This was indeed for the Russians a war of lost opportunities. Many chances were given and lost in this war especially at the Shaho, owing to want of good signalling communication, and yet the country was particularly favourable for signalling. Half a dozen transmitting stations could have maintained communication along the whole front. The telephone is very liable to interruption and difficult to lay in the mountainous country, where also the movement of mounted orderlies was too slow and uncertain. As an example of the value of good signalling arrangements, on the evening of 11th October the situation was distinctly favourable for the Russians. In the East, Stackelberg was opposed by a very weak and extended line into which the last formed bodies of Japanese troops had been absorbed, while he still held the whole of the 5th East Siberian Division intact. In the West, it was still open to Kuropatkin to employ the VI Siberian Corps and Dembovski's detachment in an attack on the Japanese left and left rear. Had he attempted to make these attacks, and to make them simultaneously, he would have had a great opportunity; the retirement of the Japanese left would have been in jeopardy and the road to Liaoyang opened to the Eastern detachment. But the whole plan would have been dependent on good inter-communication, in telegraphic and visual communication; and in the absence of these, Kuropatkin could hardly have hoped to ensure the simultaneity of action requisite for success; he could not even tell the vacillating Stackelberg that the time had arrived for decisive action.

HEIKOUTAI.

The country which was the scene of the battle of Heikoutai is singularly well adapted to the organisation of a defensive line. A perfectly flat open plain, no natural obstacles to view and fire, a few light trees scattered about and around the numerous Chinese graveyards, and affording very little shelter of any sort, villages numerous and spaced at a very convenient distance for bringing a cross-fire over the intervening ground. The villages themselves are strong for defence, with clearly defined lines which enable fire to be controlled and delivered in any direction, and yet, owing to the light trees which surround

the village, these lines are not too visible to the enemy. The Japanese have given us here an excellent example of how cavalry may be employed to assist in holding a defensive line. One saw, too, what has already been mentioned, *viz.*, the difficulty for cavalry to act offensively and break through a screen such as that constructed by the Japanese, and how it was easier for them, in fact, to operate in the apparently forbidding country on the East, especially in wet weather.

There is no apparent reason, however, apart from the absence of cavalry spirit and knowledge of handling of cavalry, to be found through all the Russian ranks concerned, why Kuropatkin, when making his attack on the Japanese defensive line, should not have massed a force of 20,000 cavalry or more and moved them right round the Japanese left. The ground at this time was suitable for the movement of cavalry; the rivers were frozen, there was ample fodder collected in the numerous villages, there were no physical obstacles, and water was plentiful.

Imagine the effect of the sudden appearance of this mass of horsemen in the Japanese rear during the critical days of the 24th and 25th January.

The co-operation of cavalry in battle with the other arms never seems to have entered the heads of the Russian leaders. They were apparently impregnated with the same ideas which we used to find adopted nearer home, though fortunately these ideas no longer exist with us, *viz.*, that, owing to deadliness of modern arms of precision, the cavalry-man has no place on the modern battlefield. But if cavalry is not to co-operate in the battle it is not worth its keep. When one views the ground over which the battle of Heikoutai was fought one is convinced that, as in the defence so in the attack, there was a great opportunity for the employment of the Russian cavalry.

MUKDEN.

The attack of the 5th Division at Wandjawopen. The Division attacked over something like 3,000 yards of perfectly open ground, losing 2,500 men. It strikes one as being just as desperate a stretch of country, to attack over, as that which faced the German Guards at St. Privat.

Russian artillery engaged the Japanese artillery, and the shooting of the Russian infantry, holding the low sand hills, was wild. Had the Russian artillery devoted itself to the Japanese

infantry, or the Russian infantry shot better, or both, the attack must have ended as the attack of the Guards at St. Privat.

The attack of the 5th Division on Ninguantun and of the 3rd Division on Yanoytun, were both desperate affairs. The Japanese attacked with the greatest courage in the open plain. At Lingunpu, the Russian position was immensely strong—a village with a redoubt on either side, with great command in every direction. It must have required much resolution and hardihood to order the attack, and much valour to make it. The Japanese failed after suffering enormous losses. Were these costly attacks justifiable? We believe they were, under the circumstances. Viewing the battle as a whole, it was at this period a case for the Japanese of “now or never.” It was essential to make their turning movement succeed at any cost. It was a case of wresting a victory from the adversary. They had undertaken their turning movement with too small a proportion of their force at the outset. It was their decisive stroke, and for it larger numbers should have been detailed than for the attacks on the other front.

What do our Regulations say about this?

They dared greatly and won, but their laboured efforts to extend their front northwards show clearly the result of their original error.

From the Lingunpu redoubts, one could observe to a great distance, the arc along which the Japanese armies were fighting, and to a certain extent the immensity of this battle.

The country about here is similar in features to that about Heikoutai, except that there are more trees, especially around the villages; and in places it is undulating and slightly broken and affords more cover, but still limited, to attacking troops. The ground over which the 3rd Division attacked was, however, perfectly flat. There is no doubt these desperate attacks with their terrible loss of life had their value in wearing down the enemy, forcing him to act everywhere on the defensive, and thus admitting of the further extension which was essential for the completion of the enveloping movement.

The scene of the fighting north-west of Mukden and of the Japanese 1st, 4th and 7th Divisions against Burger, de Witt, Schatiloff, the I Siberian Army Corps, etc.

The ground is very open as one gets north of the woods surrounding the Emperor's tomb between Santaitsy and the

railway, which probably accounts for the difficulty the Japanese encountered in trying to push on to the railway itself.

West of a N. and S. line through Santaitsy, and South of an E. and W. line through the Emperor's tomb, the country is more undulating and enclosed, the villages numerous, and graveyards scattered everywhere. In fact, it is easy to follow the line of the Japanese advances by the amount of cover given by the villages and graveyards along any particular line.

The advance was probably carried out by a series of attacks on the villages, aided by turning movements from the cover of the graveyards, and an inspection of the Japanese map confirms this view.

When all is said and done, when at last we turn our backs on these Manchurian hills and plains, once alive with the tramp of armed men and now so empty, once intense with the human desire to kill and now so peaceful, we ask ourselves why, on the one side, was there uniform success, why, on the other side, invariable defeat? Is the answer to be found in the support or interference of politicians, in anticipation or neglect as regards the previous preparations, in the organisation of the troops or in their relative bravery, in the armament, in the orders of the Commander-in-Chief, in the higher leading, or in what? And after every war we hear the success of the victor attributed to superior mobilization and organisation, to better generalship, to the corps of officers, to the staff work, to the non-commissioned officers, to the infantry the backbone of the army, to armaments, and even to money. And, in reality, it is never any single one of these things, but a combination of all of them, and it is the strongest combination which wins. And what is the agency which brings about this combination?

Success in the conduct of war depends more than anything else on the intangible spirit of an army, on the feeling that is in every individual composing it. And success in the preparation for war during peace, lies in the spirit of the nation. This fact is written so clearly in the pages of history, not of military history only, but of all history, from the time of the French Revolution down to the latest war in the Balkans, that he who runs may read it. After following the course of the Russo-Japanese war on the ground the conviction is intensified in me that the foundation of success in war, the foundation on which the factors which ensure success are based, is a cause. Our great

poet philosopher recognised this when he put into the mouth of Westmoreland the words :—

“ Our battle is more full of names than yours.

Our men more perfect in the use of arms.

Our armour all as strong, *Our Cause the Best.*”

The constant struggle which goes on now-a-days among European nations for national prosperity, the cry after wealth, comfort and luxury, the struggle of socialism against imperialism; all these lead to a certain spiritual apathy which weakens the national feeling of honour, which alone, in the absence of other motives, is sufficient to supply the Cause. And it was this national feeling of honour, untarnished and shining bright, which was at the root of the Japanese tactical power in Manchuria.

In this war the Japanese were fighting for a Cause, the Russians had no Cause. The Japanese conquered because the army and the whole nation were imbued with the spirit which springs from the possession of a great national Cause, the spirit of self-sacrifice, the spirit to win at any cost, the only spirit which ensures success in war.

AIRCRAFT AND ANTI-AIRCRAFT DEFENCE.

B, Squadron Leader E. J. Hodson, R.A.F.

In this paper it is proposed to consider the various forms of attack open to aircraft, against different targets and at the same time to examine the best method of defence against these attacks. Before actually analysing the detail of these problems, it is proposed to set out the guiding principles of air strategy.

Aircraft are first and foremost an offensive weapon, and this being so, it follows as a natural corollary that the best defence against aircraft is a vigorous offence. This first principle of air strategy needs, however, a certain amount of amplification, to make its significance quite clear.

When making a raid over hostile territory against, for example, the enemy's capital, aircraft will fly very high, at a height of 20,000 feet or over. The success of such an operation must depend on several factors, the most important of which are :—

- (a) *Surprise*, i.e., giving the enemy the minimum amount of warning, thus making it extremely difficult for his single seater fighters to attain the necessary height before the arrival of the raiding force over the objective. London is a very good example of this, and to take one nearer still, Peshawar. In the former case, thanks to the Channel, it is estimated that 30—40 minutes is the most warning that we are likely to get of the approach of hostile formations. It takes a modern single seater fighter 15 minutes to climb to 15,000 feet—and even having got to the raiders' height it has got to find them. To take the case of Peshawar enemy aircraft could probably reach Landi Kotal before we heard anything about it. This is still more serious and even supposing we received a message at our aerodrome at Peshawar 5 minutes afterwards, we should only have 15 minutes at the very most and probably less, to get up to the required height. This might not be 20,000 feet, but it would certainly not be less than 10,000 feet and

might quite easily be 15,000 feet. We are, in fact, in a worse position than London, which cannot contemplate the future with any degree of equanimity. Surprise from the air is going to be a bolt from the blue in more senses than one and probably of great material and moral consequence.

- (b) *Immunity from Attack.*—The greater the surprise, the less likelihood is there of encountering heavy opposition. This is perhaps a platitude, but it is proposed to say a few words about it. By achieving this surprise, the quantity of the opposition, on the way to the target anyway, is bound to be reduced. It is probable that the outer ring of anti-aircraft defences will be passed safely and it is further likely, as has already been pointed out, that the defending aircraft zone will also be safely crossed. There remains then only the inner zone and such permanent aerial defences, such as balloon aprons, as may be provided. It is doubtful if the height and speed, the essential factors for accurate A. A. fire, have yet been discovered with any degree of certainty, and therefore the remaining distance to be covered before the target zone is reached, may be accomplished in comparative immunity and there remains only to discharge the cargo of bombs and depart home as swiftly as possible. Casualties there may be on the way back, but the objective will have been achieved.
- (c) *Weather.*—This is, of course, a most important factor. The clearer the air or the brighter the moon, the greater the chance of failure to the attackers. Given a cloudy sky the task of the defenders will be rendered even more difficult than it is normally.

Let us consider this question very briefly from the aspect of the aggressor. The science of meteorology has advanced by leaps and bounds of later years, and there is every reason to suppose that it will continue to do so.

Given then, that the potential enemy has good and accurate means of forecasting the weather over an area which will embrace his main aerial objectives, a not unreasonable assumption, he will be able to

choose his own and the most favourable time for delivering his opening attack. The purpose of emphasising these points is to show that in the hands of an unscrupulous or ambitious enemy, aircraft are a very grave menace to civilisation, and it is hardly too much to say that the aggressor will start the game holding three aces.

The question now naturally arises as to what steps are to be taken to meet this menace. There is only one real answer and that is to get in first whack. It is as well, however, to be under no disillusionment about this. It is highly probable, as past history will bear witness, that England will never get in first whack, unless we alter our national characteristics in the next few years. It is assumed, therefore, that we have been surprised and that although we have got a reasonably effective anti-aircraft defence scheme, it was unable to pull its full weight at the start. What do we do now? We have two courses open to us, and it is impossible to say which of the two is the best or which will be employed. Many, at present unknown, factors must guide the decision. To name just a few:—The strength of the enemy's air force, its location, the nerve centre of the enemy, *i.e.*, his capital and seat of government, the location of this nerve centre, the psychology of the enemy nation, and so on. These two courses are:—

- (a) To attack the enemy's air forces at their bases and destroy them.
- (b) To attack the enemy's nerve centre, *i.e.*, his capital and seat of government and possibly, as well, other important centres of industry.

To consider (a). If the enemy's air force is very strong and is backed by a large industrial output, *i.e.*, his losses in material can be quickly and amply replaced. If he has a large reserve of pilots and if these pilots are possessed of a high morale, if in fact his position in the aircraft world is so strong, as a country which has banked on this weapon may well be, then perhaps it may be necessary, and vital even, to retaliate at once by trying to destroy his aircraft material and the lives and morale of his flying personnel.

To turn now to (b). Suppose that the situation outlined in (a) is not the case, and that the enemy's aircraft and personnel will not stand the strain of many casualties of any sort. Suppose

also that his population are not willing to be bombed, and maintain a stoical attitude, and suppose still further that his government is easily disorganised if it finds itself exposed to the risks of war; then we must direct all our energies against his nerve centres, confident in the belief that such a hue and cry will be raised as will withdraw all his offensive machines into defensive ones, and we shall have achieved just the same result, only in another way, as if we had destroyed them in their hangars. In both cases we shall have stopped the raids on our own nerve centres.

There remains now the case of an enemy who possesses an ample air force and whose people have the will to win. This is going to be a test of endurance and it is impossible to say which course (a) or (b) is going to be the most profitable.

Public opinion is probably going to demand two wholly incompatible courses.

- (i) Reprisals. (ii) The concentration of all aircraft in a defensive role to protect them. What will happen only the gods may decide, but it is going to be a very pretty problem.

It is now proposed to pass on to a more detailed examination of the various phases of this struggle against one of the most formidable weapons that the science of man or the development of so-called civilization has devised, leaving, it is hoped, the idea that the best weapon against aircraft is aircraft and the best defence against aircraft attack is a vigorous offensive by your own aircraft.

METHODS AND MEANS OF ATTACK.

In the first place, the weapons which aircraft can or may employ as their medium of attack will be considered.

- (i) *Bombs*.—These may vary in size from 20 lbs. to 500 lbs. or even 1,000 lbs., depending on the use for which they are required. For attacking troops the most usual are 20 lbs., 112 lbs., or 230 lbs.

For the destruction of property or material, 230 lbs. and over will be used. These bombs may either burst on contact or be fitted with a delay action fuse, enabling them to be set to burst at any time after dropping up to 36 hours. They may be fitted with high explosive, gas or smoke, or they may be of an incendiary nature.

(ii) *Machine Guns*.—All service types of aircraft are fitted with one or more machine guns, according to their size and type. These can be used, by aircraft of a suitable type, to attack formations of troops, transport convoys, generals' motor-cars, horse, mule, camel or oxen lines, headquarters of formations and so on, either with ordinary 303 ammunition or, if the target is especially suitable, with incendiary ammunition.

(iii) *Other weapons*.—The first two are the most normal, but it must not be expected that the ingenuity of man will be exhausted and we may confidently expect other horrors, such as steel darts, poisoned or non-poisoned, liquid fire and cholera germs.

To consider further the method of delivering such attacks, before leaving this subject.

(i) *Bombing*.—This form of attack may take place from any height from 50 feet to 20,000 feet or over according to the nature of the target, the pertinacity of the attacker, and the strength of the defence. As a general rule, however, long distance bomb raids will take place at considerable heights, *i.e.*, mostly independent air action. Bombing against troops or objectives in the zone of the enemy's armies, at medium or low heights.

(ii) *Machine Gunning*.—To be really effective and to produce the maximum moral effect must take place from low heights.

(iii) *Other forms of attack*.—In this case it must depend on what form the attack takes, but as a general rule they will be delivered from low or medium low heights.

The different forms of offensive action by aircraft have been considered and it is now proposed to consider the various anti-aerobates or, in other words, means of defence against aircraft. These are discussed under two headings, (i) active defence and (ii) passive defence.

(i) *Active Defence*.—

This may be divided into three parts:—

(a) The machine gun in the air.

(b) The anti-aircraft gun.

(c) The machine gun on the ground and possibly small arm fire as well.

To take (a) first. The machine gun in the air is mounted in an aeroplane, and, as has already been emphasised, is undoubtedly the most effective anti-aircraft measure at the present time.

The single seater fighter is the usual weapon employed, and given suitable conditions, will do much damage amongst the enemy's bombers. Bombing machines will almost invariably fly over in formation, and a well preserved formation of big and heavy machines is a very formidable proposition to tackle, even for fast fighters. Once this formation is broken up, however, the fighters can really come into their own. This leads us naturally to the question, how can the formation be broken? It can be done by the fighters, but undoubtedly the most efficacious method is a combination of A.A. gun fire and single seater fighters.

- (b) *The A.A. Gun.*—This method of anti-aircraft defence is of the most vital importance, but it can be said with a considerable amount of accuracy, that it is still in its infancy. The main point is this, that A.A. guns suitably disposed and provided with searchlights for night work, sound locators and an elaborate system of communications do, and will increasingly provide a very efficient form of A.A. defence.

Aircraft and A.A. guns and their attendant satellites are complementary, and it is here that the previous point comes in. A.A. guns more than anything else perhaps, will provide a means of breaking up formations of enemy machines, thereby giving our single seater fighters the opportunity that they desire. But this is not all. The more efficient the A.A. organisation becomes and the more accurate their shooting, so will more of our fighting aircraft be released for other and more offensive rôles. Again, there are many occasions when it is practically impossible to collect a sufficient number of aeroplanes, at the right time and place; for instance, troops on the march, seaports, etc., and here the A.A. gun must cope with the enemy single-handed. It must never be forgotten that air superiority is a very relative term, and can very rarely mean total immunity from hostile air attack. The actual menace may be so small that it is not worth locking up any aircraft to meet it,

and that is where the A.A. gun will come in, and that is one meaning of air superiority. So long as there is a big potential air menace, you may be compelled to lock up a large force of aeroplanes in a defensive rôle. Once this menace is removed you are free to employ them offensively and leave the rest to your ground defences.

To turn to the last of the active defences (c). The machine gun on the ground. This form of defence is useful solely against low flying aircraft. In employing these tactics aircraft are practically immune from air attack because the area of manœuvrability is so limited, and they are practically immune from A.A. gun fire for technical reasons connected with elevation, traverse, and also by reason of the relatively high speed with which they cross the front. There remains, therefore, only automatic and small arm fire to deal with them, and if this is properly controlled and coolly used it may be quite effective.

The second part of A.A. Defence will now be dealt with.

(ii) *Passive Defence.*—

This will be divided into 5 sections, but they do not need a great deal of comment. The first (a) is Balloons and aerial obstacles. These consist, in the main, of a series of aprons suspended in the air by means of balloons at varying heights, the whole forming a sort of torpedo net round the defended area. The most notable example of this was the apron defence put up by the Italians round Venice.

This form of protection, though very expensive and limited in its sphere of action, is very valuable especially in its moral effect on the enemy airmen.

(b) *Kites.*—This form of defence is, in its way, a child of the apron scheme and consists in flying kites which support steel wires at different heights. The effect is the same, though, of course, in a modified way. It is understood that the Germans employed this method in Belgium and used to pay Belgian children to fly these kites, which incidentally did claim a few victims.

(c) *Camouflage.*—This is undoubtedly an effective A.A. protection and was developed enormously during the war. The art of camouflage is a scientific study, and can be

carried to the most amazing lengths. In fact a book has been published by a famous artist, in which he claims, with what one supposes he considers impeccable evidence, that the Germans concealed whole Army Corps towards the end of the war.

Be this as it may, it is a form of defence that is worthy of the closest study and though we may not be able to camouflage places like London or Liverpool, we can and must use every endeavour to camouflage our ammunition dumps, rest camps, factories, gun lines and so on.

(d) The fourth division of this defence concerns a variety of methods, which are in some ways allied to camouflage. The first is movement by night instead of by day. The second is the creation of false areas, the third is the use of smoke screens, and the fourth is the obscuration of lights. Each of these four precautions will help to mystify and hinder the opposing airmen in their work and minimise the effect of aerial attack and do not need much further comment.

(e) The last is action which the troops themselves can take and that is by the adoption of A. A. formations whether on the march or halted by the roadside, or in billets, and this applies not only to troops but to the lay out of dumps, rest camps, base workshops, factories and everything else. It will not in future be safe to herd all these things together as is the natural, most economical and most efficient way of doing things. It will be literally asking for trouble to herd, in every sense of the word and this is a most vital consideration. The troops will not be able to carry on a war for 5 minutes if everything behind them on which depends their fighting efficiency, is liable to be blown up en bloc. The moral effect alone will be appalling, let alone the material effect which will be equally vital and will re-act at once on the moral effect.

The points discussed above are general principles and it is proposed to consider some of these general principles in slightly more detail.

There are four main situations in which anti-aircraft defence will be required.

- (i) For the defence of a city or densely populated area such as London.
- (ii) The defence of an isolated town or seaport.
- (iii) The defence of a small vital point such as a railhead, an aerodrome, a bridge, an observation balloon and a defile on a line of advance such as the Khyber Pass.
- (iv) The defence of a body of troops on the move [in billets and at rest the defence of troops becomes automatically a special case of (2) or (3)], transport convoys and mechanical columns.

To consider the case of (i) The Defence of a City.

To be really effective and to efficiently cover an area such as London, a very elaborate organization is required. Such an organization must be able to deal effectively with either airships raiding collectively or independently, or single or multiple formations of enemy bombers totalling possibly 100 or 200 machines, either by day or night, probably the latter.

The A. A. defence of such an area is fully set out in service manuals and will not be discussed further here.

(ii) The defence of a seaport or isolated town is practically the same as is laid down for (i), only on a very modified scale and is set out in service manuals.

(iii) Defence of a small vital point.

The essence of this defence must be gun and machine gun fire. Visible targets will be engaged by direct fire, and invisible ones by barrage fire. This problem presents less difficulties from a defence point of view than any of the others. The area to be protected is small, which consequently confines the space in which the attackers can operate. In this case an effective form of tactics is the putting up of a "geographic barrage," *i.e.*, a barrage put up in some definite relationship to the Vital Point. In regard to machine gun defence, to be effective this must be concentrated, and it is chiefly designed to combat the low flying attack.

(iv) To turn now to the last problem, *i.e.*, the defence of troops on the move, lorry convoys, etc. This is not at all an easy problem from the defence point of view

and may correspondingly be a "gift" from the aircraft point of view. First consider the problem of troops on the move. The general principle must be, it is thought, to piquet the line of march, moving or leap-frogging these piquets as the march progresses, or as it becomes necessary. To take an example. A division is moving on a single road in face of the enemy. It is supposed that two A. A. batteries have been allotted for its defence, one of which will presumably operate between the Advance Guard and the Main Body. As soon as the march begins sections will be sent up to occupy as advanced a position as possible, based on the reports of the section reconnaissance officers, who must keep well ahead. The problem here is to keep well forward while at the same time avoiding having more guns than necessary en route and consequently temporarily out of action. It is of great advantage if roads close to and parallel to the road on which the division is moving can be used, as not only will greater freedom of movement be possible, but the troops themselves may be spared inconvenience. The use of machine guns should be on the same principle but at present there does not seem to be any such organisation.

The problem of the protection of troops on the march is a very important one and needs a more detailed examination.

Aircraft are most likely to engage this form of target by low flying attack with bombs and machine guns. Aircraft attacking under these conditions present a most difficult target and they are likely to appear out of the blue with very little warning. It is quite evident, therefore, that reliance cannot be placed on A.A. guns alone, and they may in fact be quite incapable of being effectively operated, by reason of the fleeting nature of the target. The troops will, therefore, have to look after themselves and use the most effective weapon against low flying attack—the light automatic and machine gun. It is emphasised that it is considered most vital, that a regular drill should be evolved to meet these emergencies, which should be frequently practised until it becomes automatic, otherwise heavy casualties are likely to be incurred.

In the first place march distances must be carefully regulated, with varying degrees of intervals between formations. It is suggested that there should be a space of 50 yards between companies, 100 yards between battalions, 250 yards between brigades and $\frac{1}{2}$ mile at least between divisions. It is fully realised what such a proposal means, but it is thought that such precautions are urgently necessary when troops are marching in any zone which is open to attack by enemy aircraft. Secondly, when halted, troops should scatter under hedges or cover of some sort at the side of the road or on adjacent ground. Thirdly, if attacked they should employ the same tactics, except those troops detailed for A.A. machine gun defence. These troops will immediately get into action as quickly as possible. Here arises a small point. An efficient and light portable mounting for A.A. light automatics and machine guns is very necessary to enable accurate and rapid fire to be brought to bear on the attackers. The organisation of this method of defence and the quickness with which it can be got into action is of great importance, since the whole attack may be over in 5 minutes and every second will be vital.

To sum up, therefore, the Commander, before deciding on his route, should take the following points into consideration: (a) Is my route screened naturally from the air, and if it isn't is there another one which I can use which is. If there is no alternative, am I justified in sending my troops by day, or ought I to make a night march? (b) Are my arrangements for A.A. defence as good as they can be and do the troops understand their job? (c) If my column is attacked do my troops understand what to do?

There is just one more point. If there is no cover and the column is attacked, troops should at once scatter and lie down. In this way the force of the blow will be to some extent lessened.

To turn now to the question of motor, horse, or other convoys.

The problem here is undoubtedly more difficult since they cannot scatter in the sense that troops can. The first protection, however, must be march distances, as has been already suggested for troops. In this case, however, it is of even greater importance, more especially in the case of mechanical vehicles where the risk of collision is added to those already present.

Convoys should proceed in sections, with intervals of at least 50 yards and more if possible, between sections. It is further suggested that some form of A.A. machine gun protection should be provided with all large convoys, being distributed at suitable intervals throughout.

A big convoy, if attacked, should at once halt, under cover if possible, the personnel scattering at the side in the same way that the infantry do; the A.A. sections going into action at once. There will always be much discussion as to whether or not a convoy should accelerate and try and successfully run the gauntlet. It would seem, however, that the risk is too great. The actual speed of a heavy motor convoy—not including light and fast cars—is neither here nor there to an aeroplane diving at anything up to 200 miles an hour. The havoc that will be caused on the other hand, by collisions, etc., due to drivers being short or lorries blown up, will be appalling. If they stop, at least the personnel will be left more or less intact to help clear the debris, which they very well may not be in the other case. The question of vehicles such as tanks, which are immune from machine gun fire is another matter, and even if they stop to avoid risks of collision there is not the same need for the personnel to scatter, and they may be able to turn aside across country.

It is thought that this question of the tactics to be employed by lorry convoys when attacked by aircraft, may assume considerable importance to us in India before very long. Many of the roads on the frontier pass over country which is ideal from the air point of view. These roads pass through defiles, they wind amongst masses of rock and generally afford no possible scope for lateral movement, should such be required. It is of vital importance that convoys caught under such conditions should at once halt and the personnel scatter under such cover as is available. One can well imagine the confusion in a place like the Khyber or Kohat Passes, and bearing in mind the lessons at the end of the Palestine Campaign, there is no doubt that the risk is not worth taking.

IMPERIAL BEAM WIRELESS

By Captain D. H. Cole, M.B.E.

Prior to the year 1924 all transmission over long distances by wireless was effected by means of High Power Stations using wave lengths of from 10,000 to 16,000 metres. To obtain a wave length as large as this the size and power of the installation were necessarily very great. Thus the British Post Office High Power Station at Rugby has an aerial supported by 16 towers each 820 feet high: and that of the new High Power Station at Buenos Ayres designed for communication with Europe is supported by 10 towers of 860 feet in height. Further, the electrical energy employed for transmission on this scale runs to the enormous figure of 1,000 Kilowatts. Needless to say, therefore, the capital outlay and running expenses for such stations must be a serious consideration, especially as they are uneconomic in that most of the power employed is wasted in broadcasting the waves in *every* direction and not in transmitting them particularly in the direction of the Receiving Station. A little reflection will show that if it requires a power of 300 Kilowatts to broadcast a long distance message to the whole 360° of ether round the transmitting aerial, as is the case in High Power wireless transmission to Canada, the power needed to transmit waves confined in a beam of, say, 30° would probably be only about one-twelfth as great or 25 Kilowatts. Capital and running expenses would be correspondingly reduced.

In view of this, for some years past Mr. Marconi has been carrying out experiments to discover some method of wireless transmission which would be more economical. As early as 1896 he had shown that short wireless waves could be reflected in a desired direction by using a metal plate reflector shaped like half a cylinder and placed behind the transmitter. The difficulty, unfortunately, with such short waves was that they could be reflected or diverted from their course by natural obstacles like mountain ranges, in the same manner as ripples on a pond will be reflected by a stone; whereas long waves could bend round these obstacles just as a great ocean wave

will curve round a rock, rejoin and pursue its course. Another difficulty experienced with the short wave was that sunlight appeared to have a "fading" effect on it, so that its application appeared to be limited to the hours of darkness. In long distance transmission this was apparently an insuperable objection, as it ruled out communication by short waves to Australia or New Zealand in which cases the path would have to pass through a daylight zone somewhere during almost the whole of the twenty-four hours. Nor, on the other hand, could long waves be satisfactorily reflected. The reflector required would have to be huge and most costly, a 1,000 metre wave transmitter requiring one whose area would be proportional to the square of the wave length or about 275 acres in extent. This was the dilemma. High power wireless could communicate with the most distant stations by day and night and was consequently adopted, but only at an enormous waste of energy. Short waves could be reflected but could not be used for long distances.

From 1916 to 1924, however, Mr. Marconi and his colleagues pursued their experiments on the use of short waves, to ascertain more fully their behaviour, and by the summer of 1923 they had discovered that, contrary to all anticipation, shorter waves than those previously experimented with, *e.g.*, waves of from 30 to 100 metres produced by the use of newer apparatus available were in fact not materially interfered with by obstacles such as ranges of mountains and secondly *that the daylight range over long distances increased very rapidly as the wave length was reduced* within the limits mentioned. This last discovery, not yet fully explained by science and contrary to all previously accepted ideas, is epoch-making in the history of communications. By October 1924 it was possible to utilise it in keeping up communication with Sydney, New South Wales from Poldhu, Carnarvon, for $23\frac{1}{2}$ hours out of 24, using only a small experimental plant at the latter station and a power of only 15 Kilowatts. In December, trials were continued and satisfactory touch obtained with Canada, the United States, Brazil, the Argentine, Bombay, Karachi and Cape Town.

A second result followed. The use of a reflector of moderate dimensions, which would focus the waves in a beam became feasible at the transmitting end and another reflector which would concentrate the waves on the receiving aerial could also be used. Various types of reflecting apparatus were evolved, the more important being (1) the parabolic reflector consisting

of a series of vertical wires arranged in the shape of a parabola round the transmitting or receiving antennæ of the aerial and (2) the flat transmitting reflector in which the antennæ and reflector wires are arranged so as to make grids parallel to each other.

What are the advantages of this apparently simple discovery? First, the waves can now be concentrated in a beam, thereby avoiding the immense dissipation of energy already referred to. Less power would consequently be required to transmit messages over a given distance. For instance, in the experiments carried out by Marconi between Poldhu in Wales and a small receiving station at Buenos Ayres (5,280 miles), a wave length of 92 metres and a radiative power of only 17 Kilowatts were used. Had no reflectors been employed a power of 300 Kilowatts would have been required to obtain the same result. Capital outlay could thus be reduced and it became obvious that a beam station would cost approximately only one-quarter of the initial and running expenses of a high power station. Secondly, as the track of the waves would be confined to a beam the ether would not be congested owing to each message flying to every point of the compass. Each would fly only within the beam to its predestined receiver. Jamming owing to congestion would be reduced and reliability correspondingly increased.

A further advantage would be the comparative secrecy obtainable with beam wireless. High Power wireless transmits its messages to every station which cares to listen, beam wireless only to those that lie in the path of the beam. In this connection the sketch map of the tracks of the beams to Bombay, Sydney and Wellington from Great Britain shows the *great circle* routes taken by the beams, and the countries which they will traverse. (It also shows how deceptive a Mercator's map of the world is when one tries to imagine the shortest direction between places widely apart on it.)

This element of secrecy, however, is only comparative and must not be over-estimated. The spread of a 30° beam can be worked out by any reader with a slight knowledge of Trigonometry and is so great as to render the amount of absolute secrecy negligible. Even with a 5° beam, over a long distance, the spread would still be considerable. Nevertheless it is another step towards the achievement of this fourth necessary quality of communications both in peace and war, the other three being cheapness, reliability and speed.

So great are the advantages of the new system of transmission that since December 1924 things have moved rapidly. The British Government, while retaining their high power station at Rugby, have placed contracts with the Marconi Company for the first two beam installations, at Bodmin (transmitters) and Bridgwater (receivers) for communication with Canada and South Africa respectively. These stations are now well on the way to completion. The sites for stations in Great Britain to work Australia have been selected at Skegness in Lincolnshire, and work on them has commenced.

Two beam stations are being erected in Australia near Melbourne to communicate with Montreal and Great Britain respectively and to have a traffic capacity of 86,400 paid words daily. Canada has made greater progress than any other of the dominions and the stations near Montreal which will work direct with Australia and Great Britain are now almost complete. The transmitters are at Drummondville, 40 miles east of Montreal, and the receivers at Yamachiche about 25 miles north of Drummondville. In South Africa the erection of a high power station had already commenced, but the advantages of the beam system so outweighed those of the high power plant, that work on the latter has been suspended. Beam stations are now being built at Klipheval (transmitter) and Milnerton (receiver) near Capetown. In India it is expected that the site of the beam station will be at Kirkee near Poona and, when completed, it is to be capable of dealing with a minimum of 30,000 paid words daily each way. The first period of the license is for ten years at the end of which time the Indian Government have the option of purchasing the service outright. The agreements between the Dominions and the respective wireless companies provide that the wireless service shall be available to the public at a cost per word approximately 30 per cent. below existing submarine cable rates.

A fuller description of the Canadian Stations furnished by the courtesy of the Marconi Company, may be of interest as they show the lines on which all the other great Imperial Stations are being constructed and also on which they will be worked. The transmitting aerials for communication with England are supported on five masts and there are a similar number of masts for the receiving aerials. The station for communicating with Australia has three masts for the transmitting aerial and three

for the receiving aerial. The number of masts and their height in each case is determined by the wave length to be used. These masts are of the steel lattice work type, 300 feet in height for the English stations and 250 in height for the Australian stations. They are in each case 650 feet apart. The overall power required for each beam will be 150 H. P. and the power delivered to the anode of the valve only about 20 Kilowatts.

By an agreement with the Postmaster-General, dated July 28th, 1924, which provided that the Canadian Marconi Company should construct the beam station in Canada for communication with the corresponding station which is being erected in England by the Marconi Company as Contractors for the British Post Office, the following important requisites were defined:—

- (1) Both the sending and receiving sections should be capable of working simultaneously.
- (2) The transmitter should be designed to concentrate the emitted waves within an angle of 30°.
- (3) The receiving section should have a similar aerial system designed to focus the receiving waves.

In England both transmitting and receiving sections are to be capable of operation at the Central Telegraph office in London by means of the method known as remote control, and in Canada they will be operated by the same means from the office of the Canadian Marconi Company in the city of Montreal. Thus messages are prepared by means of a perforator with a type-writer key-board on a tape. The tape is fed through a high speed transmitter in London which will automatically operate the apparatus at Bodmin. Incoming messages at Yamachiche will pass to the Central Control Office in Montreal where they will also produce perforations on a paper tape. This in turn will pass through another apparatus that transforms the signals into ordinary Roman characters and prints them. It will be obvious that this automatic method of transmission and reception will minimise the possibility of error while it greatly increases the speed of transmission. Each station will be capable of communicating at a speed of 100 five letter words per minute each way during a daily average of 18 hours.

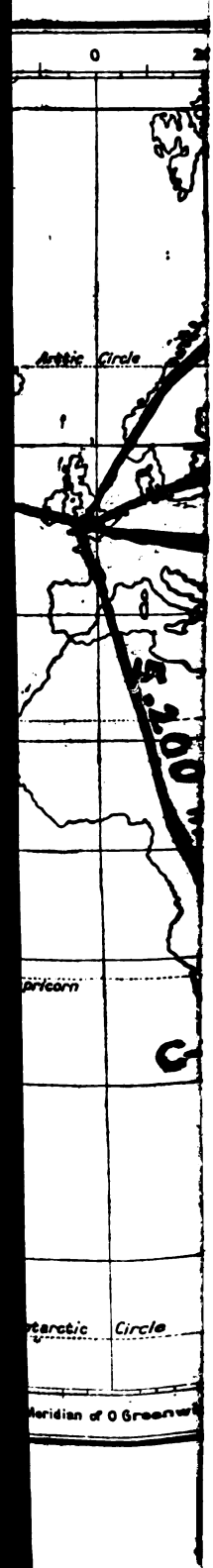
Subsidiary feeding stations throughout Canada are also being erected.

The Dominion undoubtedly offers a unique field for wireless development. Strung out loosely from east to west on a 3,000 mile line, with her cities widely separated and her population

more or less scattered, she should benefit enormously by wireless enterprise. This is particularly the case with reference to Montreal which by the new system will for the purposes of business communication become as near to London and Sydney as Paris is to London to day. It will be a hub of wireless communication linking the important industrial regions of Canada and the United States with Australia and the Orient on the one side and on the other with Great Britain and Europe.

A quiet revolution in rapid means of communication has thus been effected which by reducing costs of rapid messages will undoubtedly stimulate Imperial Trade. It will do more however. In a scattered Empire like the British Commonwealth of Nations any method by which the mile can be made to shrink in value is another binding force to hold the Empire securely together. For instance, many minds at present are gravely concerned about the lack of continuous consultation between the Dominions and Great Britain on matters of foreign policy and profess to see in this the breakdown of Imperial Unity. Distance is the great bar. Premiers cannot maintain the personal touch and the intimate feeling in correspondence by letter or by cable, which is so necessary in the settlement of delicate questions. But now by this new means in a year or less beam radio-telephony will be a natural and accomplished result, and it will be possible for the Premier of Great Britain to ring up from Downing Street his opposite number in Australia and have a chat each day on current affairs (though it would probably entail one of them sitting up rather late owing to the difference of time s).

THE WORLD OF TOR'S PROJEC



THE OBJECTS OF THE MASTER-GENERAL OF SUPPLY BRANCH IN PEACE AND WAR—II.

By Colonel on the Staff G. C. Sturrock' F.I.O., A.I.E.

My own directorate is that of the Factories and Manufacture, so I will enlarge somewhat on this side showing the progress we are making.

On this side the formation of the Branch made no actual change in ideals and aims, it merely placed us in a far better position for progress. We got the first modern lesson on the necessity of developing local supply in the Boer War. This emphasised the necessity for watching every indirect enemy action. In this war the demand on English factories was so great that supplies for the Indian contingent failed. Lord Kitchener in consequence initiated very large extensions of the factories, but the lines beyond the primary munition factories were not considered.

By 1911 the logic of events had forced on us the necessity for planned correlation of work between the factories. Up to that date orders for 827 ammunition were placed on the finishing factory, who had to make its own arrangements for supply with the primary factories. From 1917 onwards the finishing factory with its order for ammunition received intimation of the arrangements already made for supply of components and the dates for which supply had been arranged. On the surface this change looks unimportant in actuality it means a complete change in factory organisation, and that mobilisation of the full resources of the country is rendered thereby theoretically possible, and competition between varying requirements can be eliminated.

A short summary of the correlation involved, in army factories only, in the manufacture of an 18 pr. cartridge is given on the slips handed round. For this one item only 18 subsidiary orders have to be placed. If you will glance again at the way supply of ammunition is now envisaged, see diagram, you can form an idea of what the effect of this planning is. In all the stages of supply on the lines of communication after the factories a stock of ammunition is held, of a size which depends on the length of time required for replacement from the earlier stages, and the probable rate of expenditure. We now carry in addition,

for each of the 18 component stages a reserve stock, whose size depends on the length of time necessary to replenish it from earlier stages, and the rate of expenditure probable. In the case of the 18 pr. ammunition, if factories are at full work, and there is no hitch in supply of any kind, it takes a minimum of 19 weeks from the day when the first steps are taken in the manufacture of a shell, a fuze or cordite, before they can be assembled in a round of ammunition. By this system of stage reserves, factory mobilisation can be enormously quickened up. Enough is provided to enable every shop to start expanding on mobilisation simultaneously, and recruiting arrangements can be cut and dried beforehand. This idea is being developed fully. We are gradually being supplied with complete lists of every store which can be required by the known force which India has to mobilise. The rate of mobilisation is known, and from these the dates after mobilisation by which these stores are required can be calculated. The rates of practicable factory expansion can be calculated, and the requisite stocks of partially worked material estimated, and kept ready for each article required, and the Q. M. G. can be given definite information as to the dates on which he can count on supplies being handed over and the amounts to come on each date. The Q. M. G. is consequently able to revise his reserve stocks if desired. The general nature of the change is that instead of holding reserves ready to complete all echelons instantly of stores for which no continuous replacement is arranged, the Q. M. G. will hold stocks based on continuous replacement previously arranged. The money which would otherwise be locked up, in irreplaceable stores, will be gradually used in providing continuous supply. This has been done in the past. As an example consider coast defence guns in India and at Colombo. At Colombo there is no factory supply immediately behind the gun, and consequently a larger number of rounds have to be maintained there than is required in India. In the past factories have largely been built out of such savings.

In 1920 the first real effort to get out these lists of required stores was commenced, but progress has been very slow. We have got out a fairly complete list of ammunition requirements. There are also lists of a certain number of the more definitely lethal weapons ready. Tentative lists exist showing practically every store that can be required, but we are still very much in doubt as to quantities required. The development of the M. G. S. Branch since its formation is however providing mechanism which should

expedite this tabulation, and will provide for its being kept up to date as changes occur, either in the strength of the forces to be catered for, or in the patterns of stores used.

Before the formation of the M. G. S. Branch, progress of the building up of stage reserves was very slow. Since the formation, in fact within the past six months the principles have been fully accepted, money is being provided and I anticipate big progress this year. The net effect in cash is very small, as the system involves the arrangement of feed throughout rather than the building up of large stocks. After allowing for the fact that the value of goods now is greater than pre-war, it is already pretty clear that an increase in factory reserves of about 10 per cent over 1914 stocks will give us an output capacity from twice to five times as great.

The growth of the factories has been very great since 1914. I quote a few examples.

Cordite Factory.—The capacity has improved to $2\frac{1}{2}$ times its former design capacity.

Small arm ammunition.—The design capacity has increased by 70 per cent.

Gun ammunition.—The capacity is approximately five times as great.

Guns.—The capacity for new, or rebuilt guns is being increased by more than 100 per cent.

Gun carriages.—The capacity has increased by 100 per cent.

In the case of gun ammunition very large capital expenditure was incurred on plant and buildings during the war. In the case of the other items the increases have been obtained mainly by improved planning of work, the scrapping of old type machines and replacement by modern ones. For 20 years or more all prices for output have included money for replacement of worn-out machinery, but it is only this year that the money so found has actually been officially available for replacement of machinery and the keeping up with changes of patterns of army stores. A quite definite example of the change of view that is typified by the formation of the M.G.S. Branch has occurred recently. A further re-armament of pack artillery is in sight, we had to report to the general staff that we could finance the changes in machinery involved, and show the way the stage reserve of the old type

ammunition could be economically used. This is the first time, that I am aware of when such points have been considered in connection with re-armament by the general staff; up to date the only financial point considered in such a re-armament was the provision of cash for the new equipments, and the factories had to submit independent new demands for blue pencilling.

Another example of the change is indicated by a past re-armament. Some years ago certain batteries were re-armed with the 6" Howitzer. The first indication that this was happening which came to the factories was as follows. The then Director was dining out at Jubbulpore and a general officer casually mentioned the new guns were in India. A fortnight later we received an indent for spare parts. No drawings or specifications were in India, and no tools had been made, and it took two years before we could get them. Under the present organisation, I think such a contretemps is impossible, though the unexpected arrival of Mark and Tanks has opened possibilities of doubt though this does not at present affect the M. G. S. Although the initial start of a new manufacture in India is expensive and wearisome yet in the long run the general tendency of shortening communications is towards economy. I will give you two examples. Manufacture of 18-pr. guns. Guns were ordered in 1904. Two guns were made and issued by 1906 at a cost of Rs. 12,546 each, 17 in 1907 at a cost of Rs. 5,377 each, 37 in 1908 at a cost of Rs. 4,037 each. The mark was then changed and 15 more issued in that year at a cost of Rs. 4,215 each. The imported price was Rs. 6,241 each. You will note the long initial delay, the initial high price and the subsequent drop.

Manufacture of '303' ball ammunition. This was started during the nineties. From 1901 to April 1915 we turned out 760 million rounds. During that period our factory prices were never less than Rs. 3 per 1,000 cheaper than the cost of importing from England giving a net saving of 23 lakhs. From 1915 to 1925 we have issued 680 million with a minimum saving of Rs. 30 per thousand or a net saving of at least 2 crores. In 1915 the price of English ammunition rose enormously, and has never yet come down fully. Our prices rose considerably but never approached the English figures.

Since the war, the demand on the factories has been abnormally low owing to the utilisation of surplus stocks, and as factories have to maintain themselves out of the book value

at P.V.S. rates of goods supplied, they have been in great difficulties. The factories are not really solvent unless they are getting orders for army maintenance to the extent of about 170 lakhs per annum. We have been below 120 lakhs, and in consequence certain matters have had to go to the bad. For example supply of rifles. If we have normal orders for replacement we can mobilise to full out-turn in under a year; we had to be cut down to very low output on account of surplus stocks with the result that skilled men were lost, stocks of gauges, and special tools were depleted and we had to report mobilisation would take four years.

Incidentally this has quite definitely affected the condition of machine guns in India.

Another example is supply of S.A.A. ammunition. The output yearly has been—

| Million rounds. | | | | | |
|--|-----|-----|-----|-----|-------|
| 1901 | ... | ... | ... | ... | 33.2 |
| 1902 | ... | ... | ... | ... | 43.9 |
| 1903 | ... | ... | ... | ... | 54.6 |
| 1904 | ... | ... | ... | ... | 57.0 |
| 1905 | ... | ... | ... | ... | 64.8 |
| 1906 | ... | ... | ... | ... | 50.0 |
| 1907 | ... | ... | ... | ... | 53.8 |
| 1908 | ... | ... | ... | ... | 67.5 |
| 1909 | ... | ... | ... | ... | 49.4 |
| 1910 | ... | ... | ... | ... | 53.4 |
| 1911 | ... | ... | ... | ... | 57.0 |
| 1912 | ... | ... | ... | ... | 58.5 |
| 1913 | ... | ... | ... | ... | 51.0 |
| 1914 | ... | ... | ... | ... | 119.0 |
| 1915 | ... | ... | ... | ... | 131.6 |
| 1916 | ... | ... | ... | ... | 146.8 |
| 1917 | ... | ... | ... | ... | 77.0 |
| Output shut down, pattern changed to Mark VII. | | | | | |
| 1918 | ... | ... | ... | ... | 120.1 |
| 1919 | ... | ... | ... | ... | 74.0 |
| 1920 | ... | ... | ... | ... | 45.5 |
| 1921 | ... | ... | ... | ... | 31.2 |
| 1922 | ... | ... | ... | ... | 26.1 |
| 1923 | ... | ... | ... | ... | 52.1 |
| 1924 | ... | ... | ... | ... | 44.8 |

In 1923 we had what to all intents and purposes was a test mobilisation, with the result that our prices went up heavily. The difficulty was that the previous low out-turns had caused a reduction in the nucleus staff below the safe limit. In spite of the general shortage of funds, the test showed we were working on right lines. In 1924 the effects of the complete closing of Dum Dum were first felt acutely, as machinery were

actually in transfer between factories and on the top of it we had an unexpected disaster in supply, by which six months' work in an early stage was rejected. The principal of stage reserves, and the possibility of rapid mobilisation have already advanced sufficiently far to enable the General Staff to view a temporary shortage with comparative equanimity.

Our factories are located about India for a variety of reasons. Generally these are :—

- (1) Historical grounds.
- (2) Availability of labour.
- (3) Climatic conditions.

The present army in India has grown out of the old presidential armies, and our factories have followed.

Taking them individually we have two primary munition factories, both of which issue only a minute portion of their out-turn direct to troops.

The Metal and Steel factory, Ishapore, is a development historically of the old gun and shell foundry at Cossipore. In 1903 and 1904 parts of this factory, namely the steel furnaces and rolling mills, the shell forges, and the brass foundry and rolling mills, were shifted out to Ishapore, as Cossipore had outgrown its boundaries and they were worked as a branch of the parent factory. Ishapore is sufficiently close to Calcutta to be able to tap this source of labour, and the Naihati bridge over the Hooghly renders access to the main railways of India easy. In 1920 it was made an independent factory. It has a capacity for producing about 9,000 tons of steel annually of those classes which Messrs. Tata & Co. do not touch. In war time it has to draw 2,800 tons monthly from Messrs. Tata & Co. The brass furnaces and rolling mills are capable of meeting all the army's War requirements of brass, copper and cupro-nickel, but as demands in war are always unexpectedly heavy we have been endeavouring to induce firms to start works out here. The forging plant is capable of meeting army requirements, and new plant has just been erected which will enable us to produce about 95 per cent of the gun forging required. The balance will have to be imported. We have just erected a small cold drawing and reeling plant capable of making steel rod suitable for automatic machine work, and for special section work for rifle and bayonet manufacture, a new pattern large extrusion press for brass rod for fuze work has also just been erected. These plants will,

we hope, make a great difference in the amount of special imports required. The peace load on the plant for the army is insufficient to enable us to keep really efficient, and in consequence we are undertaking outside work. We are supplying Railways with axles, Railways and private firms with die steels and other varieties of steel which do not bring us into competition with any private manufacturer in India. We are also converting English surplus brass into brass sheet, for a private contractor partly with a view of showing that enterprise in starting brass rolling mills will pay if properly worked.

Under 2 per cent of the out-turn goes direct to Arsenals. The heaviest bulk of demands on this factory come from the ammunition side on which the formulation of requirements is most complete. For the remainder although we are not yet in a position to get out any detailed programme at all, we can make rough approximations to total requirements by weight, and so can gauge the amount of labour and reserve material required. A limited number of skilled men, principally on the forging and repair workshop sides will be required, and will offer a certain amount of difficulty. At present we have reason to assume we can get these on the outbreak of war, as a certain upset in the engineering trades is inevitable. We are, however, facing the fact that there may be difficulties and we are making arrangements for training men to increase the reserve available in India. For the remaining trades we do not anticipate any real difficulty. The Great War experience showed that there is a very large reserve of men accustomed to brass working and simple iron working. These cannot, even remotely, be called skilled men in the modern factory sense, but they have the necessary basis of knowledge on which we can work, and train the man rapidly to the skill needed. These men come from districts we know well, and so far as we can see we need not come into competition with firms like Messrs. Tata & Co. at all for our recruitment in war. They moreover are not of the classes suitable for military recruitment, and under present possible conditions of mobilisation in India, do not effect available man power.

The Cordite factory at Aruvankadu in the Nilgiris is historically the lineal descendant of the old gun powder factories. The origin of these is lost in the mist of antiquity. The gun powder factory at Ishapore was the oldest of all, and also the

latest closed on the cessation of the black gun powder demand. This occurred in 1904. This factory had been started in 1796. Its predecessor was on the present P. W. D. brick fields south of Garden Reach and appears to have been started by Colonel Pearse about 1780. The earlier predecessor was a group of powder mills near Sham Bazar which appear to have dated back to comparatively early Mogul times. It is interesting to observe that these mills were within the area protected by the so-called Mahratta ditch. This Ishapore factory fed the Bengal army. There was also a powder factory on astonishingly modern lines at Allahabad, forming a sort of advanced base. This was closed down in Lord Dalhousie's or Lord Canning's viceroyalty as an act of retrenchment; apparently we suffered for this during the mutiny. There was also a powder factory feeding the Madras army at Perambur, Madras, closed down somewhere about 1875, and a powder factory at Kirkee closed in 1899-1900.

The Cordite factory really consists of several different factories working under one management. We have our own plants for making sulphuric and nitric acid, a cotton waste cleaning plant, gun cotton and nitre-glycerine factories, a cordite plant and a factory for making those cannon cartridges not enclosed in brass cases. We also have our own hydro-electric plant, and machine and plumbing shops.

The mobilisation plans are most advanced in this factory, as the primary lists of goods required are all ammunition supply, and are consequently available. A small recruitment of skilled carpenters and fitters is required, but the amount is negligible compared with that available within a 200 mile radius. The main bulk of requirement is the class of labour employed on plantations, and experience has shown that if houses are provided, and reasonable wages paid they are procurable. Plans for the rapid construction of the requisite housing on mobilisation are being drawn up. Here again we draw on a class of labour not suited for ordinary military recruitment.

About 10 per cent. of the out-turn issue direct to Arsenals.

The remaining factories are more or less final munition factories.

The Harness and Saddlery Factory is at Cawnpore. It consists of a fairly up-to-date tannery, using vegetable tanning, a curriery and harness making shops, a considerable machine shop for

making rivets and such like, die-sinking and repair of tools, an up-to-date drop forging plant for light articles, and a small foundry for making brass buckles and harness furniture. It also contains a somewhat specialised tailoring plant for making flags and pawlins.

About 99 per cent of the out-turn goes direct to Arsenals.

The plant is not capable of making all army requirements in war. We can tan up to about 200,000 pounds of leather monthly when fully extended and for the balance, we have to depend on firms like the N.-W. tannery and on smaller tanneries. Arrangements are being developed by which we will control these smaller tanneries from the outbreak of war. The difficulty in meeting our harness and saddlery requirements in India is mainly due to the fact that there is a considerable demand for low grade leather, which fetches the price of about Re. 1-1-0—Re. 1-3-0 a pound, and can be produced in about three months, while a good grade of vegetable tanned leather takes from 5 to 9 months' tanning, and as the bulk of the local demand for such material can be partially met by chrome tanned leather, the local market price is only about Re. 0-2 0 a lb. more than that of poor leather. This does not pay for the increased time capital is locked up. We are trying a large number of ways of developing this supply. So far they have merely been throwing our bread upon the waters, and we cannot guess whether we will get any return. We have sent samples of our leather to Canada for exhibition, and have ascertained that a demand exists for such material there at prices which show a very handsome profit. I have heard that commercial travellers have come out from both U. S. A. and Canada in consequence, but whether they will develop an export trade of such material, or even whether it is really true that they have come out, I cannot say.

We are now proposing to buy a certain proportion of army leather from tanneries, provided that they will allow us to control their working in peace, but as we shall have to pay enhanced prices over our making costs, there are elements of doubt as to whether we shall succeed. Moreover we are to an extent somewhat between the devil and the deep blue sea. Unless we work our tanneries to a sufficient extent we cannot mobilise rapidly. If we purchase outside supplies of leather, we consequently have to find other outlets for our tannage until such time as the outside firms develop enough to give a rapid mobilisation over all. To do this, and also to endeavour to create a

natural market demand for high grade leather, we have started making a grade of belting which is not made elsewhere in India. It is possible from various indications that this may succeed in developing a supply of leather. This grade of belting sells at a rate which will pay for the increased cost of good leather, and the demand, which is already almost more than we can easily supply has induced belt making firms to consider very seriously starting up if they can ensure a sufficient supply of high grade leather. Incident ally this procedure is solving another of our mobilisation difficulties, *viz.*, the supply of belting. We have also started the making from our waste cuttings of a small item required in weaving which, however, must be made from a very high grade leather. This also shows signs of rapidly developing a demand far beyond our capacity, and may in turn develop a local demand for good leather. Prices in competition with imported goods will certainly pay for good leather.

We have a very good system of apprentice training here. This is turning out lads who really know how to tan well, and in ten years time the supply of trained men may have great effects. The possibility of market developments is recognised and we get sufficient competition for training to enable us to set a really high standard and maintain a discipline sufficient to enforce it in both the training and currying trades. We are having difficulties in getting recruits for learning harness making and are trying to get over this.

In this factory we have had an excellent example of the difficulty of starting a new manufacture. Officer's saddlery is now an item of Ordnance supply and we have had to make it. The class of workmanship involved is far above that ordinarily demanded, and we have had to train men completely for it. It has been a long business, and although a fair amount of output has passed inspection, neither we nor the Inspection Section are really satisfied. We have been at it over two years now, and are far from right, but I am thankful to say that recent inspection reports have indicated that the goal is in sight.

The difficulty of getting supplies of suitable leather has rendered more or less abortive our endeavours to develop harness making outside, though this is a necessity.

Mobilisation arrangements are in some directions fairly well advanced, and developments are in train, which can be carried out as soon as our lists of requirements are fully formulated.

Moreover this factory work demands special sections of steel, which will have to be rolled at the metal and steel factory, and the uncertainty of requirements is affecting that factory also.

It is moreover rendering our labour recruitment schemes doubtful. We can get sufficient labour near Cawnpore fairly easily now, but if on the outbreak of war we have to deplete our nucleus staff to boost the local petty firms in Cawnpore we will find difficulties in getting enough locally. Unless and until we can get fairly accurate estimates of war requirements, and are in possession to analyse what can be justifiably made of low grade leather, since the war life is independent of quality in some instances, we cannot estimate how much we can depend on harness making shops far afield where leather inspection will be difficult. The dependence on these shops is advisable if only to obviate difficulties of labour supply in Cawnpore. We have a fairly good knowledge of these shops and their work capacity. Similarly in war we have to depend on outside help largely for harness, furniture and fittings. This is a comparatively simple matter if we can get a real formulation of requirements.

This factory was started in 1862, largely as a result of mutiny campaign experience which showed the necessity for organised equipment factories. Previously we had depended on contract organisations. The adoption of standard (non-silladar) equipment throughout the Indian Army has greatly increased demands on it.

Clothing Factories.—We have two of these located at Shahjahanpore and Madras. The Madras one has old historical associations, but has moved considerably in the Madras area. It is a small factory, but the long association with army clothing has bred a body of men capable of doing very good work. It is dependent for its out-turn very largely on contract tailoring.

Recent factory legislation is rendering this a matter of increasing difficulty. The factory itself is poor and cramped and its future is uncertain. Shahjahanpore was originally a war creation, and has completely eclipsed its parent, the Alipore factory, near Calcutta. Alipore also depended largely on contract work; this has failed, in consequence of which Alipore was closed. It is becoming increasingly evident that clothing establishments under modern conditions need to be run on modern factory lines if they are to be efficient and economical, and that contracts can only be effectively placed with factories of this type. Shahjahanpore which originally consisted of some disused

British Infantry lines is now being rebuilt throughout, and, when completed, during the course of this year, will be an extremely up-to-date place. The whole question of mobilisation plans is in the melting-pot, as the effects of recent legislation have only been realised within the past few months. For the next year or two or perhaps more it will be possible to mobilise on the lines followed in the Great War, but we have to look ahead and devise a permanent organisation. The matter is under study now, principally from the accounts side and we shall have to base our plans on the results.

Gun Carriage Factory, Jubbulpore.—Historically this is the descendent of the old presidency Gun Carriage factories at Fatehgarh, Madras and Bombay. It was built in Lord Kitchener's re-organisation. It is a modern factory well laid out and equipped, and has been largely brought up to date in the past four years. It contains sawmills and a large carpenters' shop. It is the seasoning depôt for hard woods for the army. As the descendent of Fatehgarh it has a contract with the Nepal Government which has run for over 100 years for the extraction of hard woods from the Nepal forests. Modern kiln seasoning plants will be erected next year, I hope, as it is now recognised that natural seasoning must fail in a big war to supply sufficient timber. We are far from being over the complete failure of supply of seasoned wood as the result of the war. The factory was located at Jubbulpore as it was the most accessible place where really good natural seasoning can be done. The factory has a very large foundry both for cast iron, and non-ferrous work. The war demand on this is large, but peace demand almost negligible, and in consequence work in peace is expensive. It also has the largest smiths' shop in India, with hand forges, drop-stamps, hammers and powerful hydraulic forging presses. We have just erected and equipped a good tool shop, and are undertaking our gauge making in it. The machine shop is large and well equipped, and we have a reserve area for further expansion if required.

The factory is capable of making all gun carriages up to and including the 4.5", and with the aid of a few imported large components, of making those for the 6" Howitzer and 60-pr. guns. It also makes all connected vehicles, A. T. Carts and G. S. Wagons. By the nature of the demands it is somewhat of a jobbing factory turning out comparatively limited numbers of any one item, but dealing with an enormous

variety. It holds particulars to manufacture about 20,000 different stores. For its own classes of work it is cheap and the quality of work is good, but the normal high standard required, and the necessity for invariably following the methods to give this make it expensive for initial and petty jobs.

The very number of jobs which it undertakes, ranging from the supply of gun carriages to tent pins, and from signalling poles to flag staffs renders the formulation of war requirements difficult. We have so far only got data for gun carriages and components, A. T. Carts and few pack artillery saddles. Mobilisation plans for these items are well under way, but are not yet complete. The mobilisation of this factory is in many ways the most difficult. Skilled recruitment is necessary, or at any rate the recruits must have a fairly considerable basic knowledge which we can expand. Jubbulpore is not a good labour centre and we have to go very far afield. Every man who joins the factory has the village or town from which he came, recorded, and these are tallied up with his trade. In this way we are gradually building up a real knowledge of where it will be worth while advertising for recruits on mobilisation and the probable numbers we shall get. Although there is yet no danger of clashing with ordinary military recruitment, the increasing mechanicalisation of the army is rendering this a possibility and we are watching the point.

The out-turn of the factory will have to be very largely supplemented by supplies from the general engineering trade of the country. We are endeavouring to watch this and keep in touch with capacity available, but until we can get really fully formulated lists of requirements we cannot do much.

As Jubbulpore is not a labour centre we have to provide villages for the workmen to live in. In consequence in addition to his other jobs the Superintendent has to amuse himself with schools for their children, hospitals, co-operative societies and so on. Plans for rapid expansion of housing accommodation on mobilisation are under consideration.

The factory runs an apprentice training scheme for which there is a good deal of competition. 150 lads sat for the last examination for 12 vacancies.

Gun and Shell Factory, Coosipore.—This is the oldest factory that still exists, on its original site, which it occupied in 1821.

It threw off its first offshoot, Fatehgarh, only a few years later, and Ishapore in this century.

It now consists of—

- (a) A very large shell turning shop.
- (b) An equally large fuze turning shop.
- (c) A gauge shop, which also makes tool fixings and jigs.
- (d) Two gun shops.
- (e) Various general engineering shops.

This factory has suffered more acutely than any other in the years of short out-turn, and has in fact been almost closed down. The shell shops and fuze shops are new, having been built and equipped by the Black scheme during the war. They were handed over to us in 1920 not quite completed and never having been run. They are now in good order and turning out efficient work, in spite of only nominal orders for the greater part of the time. The gauge shop is also new, having been made out of the old fuze shop. The equipment is of a high order and is now practically complete. Modern manufacturing methods involve extremely accurate gauges, necessitating an exceedingly high standard of workmanship. We started in 1920 with a very limited number of skilled men and have trained them and a good many more. Progress is however necessarily slow, and we have been much hampered by the very small funds available from low orders. Real progress has however been made, and the shop is now giving a fair output of high grade gauges. It takes however about five years to train a man, and we want three times the number we have.

The gun shops are the places where the low orders have hit us most. During the war, gauges, tools and fittings wore out faster than we could replace them, and real replacement was not practicable until the gauge shop functioned properly. In consequence of the low funds available from low out-turn we were unable to tackle all sections simultaneously, and we concentrated on getting the shell and fuze shops correct, and on a nucleus of the gauge shop.

As a result no attempt to get the gun shops into a decent condition could be begun before X'mas 1923, and we have been in very serious difficulties over gun component making, and gun repairs.

Political unrest has had a great effect on the moral of our labour staff, which had greatly deteriorated. The bad effects of this are being tackled and we have reason to hope that we will

be out of the wood by about X'mas 1925, in time to take advantage of the increase of funds promised. We have to scrap about 70 per cent. of our present machinery and replace by new. This has begun and can be financed in three years.

About 30 per cent. of the out-turn goes direct to the Arsenal and the balance to the Ammunition Factory.

RIFLE FACTORY, ISHAPORE.

This factory is on the site of the old gun powder factory and in spite of great difficulties over low out-turn is in a very efficient state. During the past four years we have done a lot in the way of scrapping old machinery and replacing with modern. In the past few months we have been granted a staff strong enough to maintain our machinery properly, and the staff has joined. A grant of ten lakhs has been given to extend the place to enable us to undertake repair of machine guns, and manufacture of machine gun components. Up to date we have had to do this by makeshift methods as best we could. The actual cost of output from this factory is shown year by year.

You will understand what the handicap of this means when you realise that we only get funds based on the average cost of goods supplied, and yet have to expend about eight lakhs annually on fixed charges irrespective of out-turn. This factory was responsible for my receiving for our factories an exceedingly gratifying compliment. I took one of the Directors of the B. S. A. C. round and on the way back he remarked "I must congratulate you. Everywhere else I have merely heard complaints on the lack of skill of the Indian workman, you people merely say 'Come and see what they do,' and I have been amazed to find a standard of workmanship quite up to ours."

The factory has the best apprenticeship training of any.

Mobilisation arrangements are far advanced, and recruitment possibilities fully studied if not completely solved. The necessity for intensive training for new recruits is recognised and the details are being worked out. 100 per cent. of the out-turn goes direct to arsenals.

AMMUNITION FACTORY, KIRKEE.

This factory has been enlarged out of all recognition in the past ten years. It was started in the seventies for feeding Bombay. During the past year it has swallowed the old Dum Dum factory, and the creation of the new buildings is well advanced.

It makes small arm cartridges, signal cartridges Q. F. carts and fills H. E. Shells. It also makes T. and P. and H. E. and a host of minor explosives and fireworks. It has its box making plant.

Hundred per cent. of out-turn goes direct to arsenals. full requisite staff has only been sanctioned this year, but factory is in an efficient state, and can expand rapidly.

THE BATTLE OF KUT-AL-AMARA, 27th AND 28th SEPTEMBER 1915.—II.

By Major-General Sir W. D. Bird, K.B.E., C.B., C.M.G., D.S.O.

On the 25th September the last of the ships that had been sent back to Amara came up to Abu Rumman. Meanwhile, in the morning, the Turks and Arabs had at length roused themselves, and bringing a couple of field guns to within 4,500 yards of the British camp had opened fire. After letting off a few rounds the enemy, who were probably the detachment that later menaced the post that was left at Abu Rumman, however, went away; and, beyond the exchange of a few shots between our cavalry and the Arab horsemen, no further fighting occurred. During the day the bridge that had been thrown across the river was dismantled, but not until the troops and transport that were to march along the left bank had passed over it. In the afternoon the officers and men and some of the material of "B" Column were embarked, and all the tents and baggage of the force were also placed on board the ships and barges, only cooking utensils and one blanket per man for the troops of "A" Column being kept ashore. In addition the reserves of supplies that had been stored on the right bank of the river, and were to be left behind at Abu Rumman, were placed under a guard of light-duty men, with whom was one old-pattern 15-pounder gun.

At 5 A.M. on the 26th "A" Column marched off up the right bank of the Tigris, and two and a half hours later the advanced guard, after exploding on the unmetalled track some contact mines which did not cause any casualties, occupied the Chahaila Mounds. Meanwhile the river-steamer Medjidieh, with Townshend's headquarters, had steamed up stream after the Naval flotilla followed by the rest of the shipping; and at 7 A.M. the Medjidieh hauled into the left bank at Nakhailat. This place had, in the interval, been occupied by the flank guard consisting of the 104th Rifles, one troop of cavalry and one section of field artillery, detached from "A" Column under Lieutenant-Colonel C. B. L. Clery of the 104th. Later on the river-transport carrying "B" Column came up and also hauled alongside the left bank, and those of "A" Column went to the opposite bank; and, while

disembarkation was in progress, and the building of a bridge was taken in hand, Townshend proceeded to Chahaila near which the men of "A" Column were beginning to pitch a camp. Here as many tents as possible were to be put up so as to cause the enemy to believe that the principal portion of the British troops had been permanently placed on this bank of the river.

The morning's reconnaissance by air did not disclose any changes of importance in the enemy's position, but Townshend had been obliged slightly to alter his time-table. The commanders of "A" and "B" Columns were ordered, therefore, to arrange for the security of their troops by sending out mixed detachments to cover them; those of "A" Column going to the south, and those from "B" Column to the west of their positions. At the same time the men of "A" Column began to throw up a semi-circular line of trenches so as to protect the camp, bridge and river transports, and this line extended from the Chahaila Mounds for a distance of about one and a half miles. Except for some shelling of the aeroplanes the Turks remained quiet meanwhile until 3-15 P.M., when a few rounds were fired at the camp of "A" Column. These shells fell into the river close to the armed steamers Comet, Shaitan and Sumana, and obliged them to drop down stream out of range. Two hours later a report was received from Clery that his detachment had entrenched itself near the eastern corner of the Suwada marsh, and that his cavalry had only seen a few of the enemy's horsemen at the north-western side of this marsh. The building of the bridge of boats at Nakhailat was completed in the afternoon.

Some days earlier, on the 20th September, a telegram had been sent to General Townshend from Sir John Nixon's headquarters, which had moved to Amara, asking for information as to the date on which the attack would be made on the Turkish force. It was added that Sir John desired to be present during the battle, and that: "He does not intend to interfere with your arrangements, but in case questions of general policy have to be settled as the result of the action he wishes to be on the spot." The consequence of Townshend's reply was that the Commander-in-Chief, with a portion of his staff, went to Shaikh Saad on the 24th, to Abu Rumman on the 25th in the small steamer Malamir, and to Nakhailat on the 26th.

The presence during a battle of a commander-in-chief, who does not exercise executive command, must result in the anomalous situation that the senior officer, who is and must be respon-

sible for such action as is taken, will not actually have made the decisions. Also, the fact that his superior is at hand can hardly fail to produce some doubt and hesitation in the mind of even the most self-reliant of subordinates. It is certainly the business of a commander-in-chief to decide questions involving general policy, so far as these are governed by the local situation; but in view of the tenor of the latest correspondence with the authorities in India, it is not easy to see why it was thought that any questions of general policy would arise, as the result of the action which was now imminent, that could only be settled in the field itself. Sir John Nixon had been authorised in the month of August to proceed with the occupation of Kut-al-Amara; his instructions to General Townshend enjoined the destruction and dispersal of the enemy and the occupation of Kut-al-Amara; and a telegram had recently been received from the Commander-in-Chief in India that there was to be "No going beyond Kut-al-Amara." But Sir John apparently was prepared to exploit victory to the utmost, and to act in accordance with the spirit of a memorandum that he had forwarded to India on the 30th August in regard to the occupation of Baghdad, in which it was mentioned that this could best be effected by means of vigorous pursuit of a beaten enemy.

The night of the 26th-27th September passed without incident, except when, between 1 A.M. and 2 A.M., the Turks fired a few shells into the camp at Chahaila, but only wounded one man and one horse. In accordance with the general lines of Townshend's plan, while the remainder of the cavalry enjoyed a well-earned rest, a detachment consisting of one troop of the 7th Lancers, one section of the 76th Field Battery, the 1st Battalion of the Oxfordshire and Buckinghamshire Light Infantry and the 119th Infantry moved out, with one bearer section of a Field Ambulance, under Lieutenant-Colonel Darley of the 119th, to a point some two miles to the south of the Chahaila camp. The troops, who were supported by the two battalions of the 30th Brigade, occupied a frontage of about 1,500 yards; and their orders were to demonstrate on the right bank of the Tigris, but without bringing on an engagement. The advance, therefore, was not to be continued beyond the alignment of the position then held by the 103rd Mahratta Light Infantry, which extended roughly to a distance of 1,000 yards to the south of the Chahaila Mounds.

"It was," writes Captain Birch-Reynardson, who was present at the battle, "a cloudless morning with a certain amount of mist over the river and the most extraordinary mirage effects, which made it exceedingly difficult to make out what was happening. On the right bank the banks of the canal (Es Sinn Banks) showed up like lofty cliffs, broken and crumbling, and apparently miles away, while beneath them shimmered a boundless sea dotted here and there with huge trees and crossed at intervals by squads of men with immensely long legs, who appeared to be walking on the water." The Turks did not fire a single round at Colonel Darley's group, although it seems that their general reserve was now sent from the left to the right bank of the Tigris; and at 12-30 P.M. orders were received for the return of the British force to camp, through the 2/7th Gurkhas and the 76th Punjabis of the 30th Brigade.

Meanwhile working parties had been busy both in throwing up entrenchments, and also in improving the tracks leading to the river, cutting a ramp down to the bridge, and muffing its boards with earth and bushes. The transport of "A" Column began to cross over the bridge at 3 P.M., followed by the Cavalry and Artillery, next came the 17th Infantry Brigade, but the 16th Infantry Brigade did not follow until later; for the two battalions of the 30th Brigade, supported by part of the 16th Brigade, had again made a demonstration towards the Turkish position on the right bank in the afternoon. The leading troops of "A" Column moved to Clery's Post after darkness had fallen, the 17th Brigade arriving there between 9 P.M. and 10 P.M. The 16th Brigade after handing over the care of the camp to the two battalions of the 30th Brigade, who were now the general reserve, did not cross the bridge until about 10-30 P.M., but the Brigade had concentrated at Clery's Post at about midnight. Here the men rested for a while in hollow square formation, covered by outposts supplied by the 104th, and protected in addition by reconnoitring patrols.

The troops of "B" Column had also successfully carried out their part of the programme on the 27th. Two primary objectives had been given to General Fry. He was to perplex the enemy by advancing, and was to gain sufficient ground to enable the 63rd Field Battery to be entrenched within about 3,000 yards of the enemy's position, the heavier guns being further back and behind the 63rd. Fry accordingly sent his units forward at 5-15 A.M., the Norfolks being on the right, on their left were

the 120th, and the 7th Rajputs, as directing battalion, were on the left of the line and near the bank of the Tigris. The total frontage that was occupied was 1,200 yards, and the 110th and the 17th Sappers and Miners were held by the Brigadier in reserve. At 7-30 A.M. the leading troops gained one of the very numerous dry irrigation channels that run at right angles and away from the Tigris. Entrenchments were then begun under the protection of a line of men in extended order pushed forward for a distance of about half a mile, and of one troop of the 16th Cavalry, lent by "A" Column, which was subsequently sent off to watch the right flank of Fry's group.

At about 8-15 A.M. the enemy's artillery opened fire on the 7th Rajputs and were answered by our 4.7 inch guns, and a little later the armed Turkish vessel Pioneer also joined in the bombardment. However, in the end the Pioneer was driven off, and little damage was caused by the fire of the other guns of the Turks. During this action a reconnaissance had been made by the commander of the 63rd Field Battery, and as a result Fry, at 1-15 P.M., moved his men on for a distance of about half a mile so as to enable the battery to be placed in a position offering better facilities for the observation of fire. The troops then again dug trenches and while doing so were, between 3-30 P.M. and 4-30 P.M., shelled by the enemy's artillery. As the mirage waned in the afternoon the Turkish lines were clearly seen from these new positions, and a long row of loopholes, protected by a high entanglement of barbed wire, could be distinguished. No further incident occurred until, just before sunset,* a sergeant and 6 men of the Norfolks captured and brought in an Arab officer and 36 soldiers, who had been sharpshooting at the battalion from the edge of the Suwada marsh. After darkness had fallen blankets and cooked rations for the 28th September were sent up and issued to the infantry, the Turks remaining inactive while this was in progress.

During the evening of the 27th and night of the 27th-28th September the guns attached to "B" Column were also moved into the positions from which they were to support the next day's attack. It was found that, owing to insufficiency of transport animals, the four 5-inch guns could not be dragged overland; and they were established, therefore, with the help of the 48th Pioneers, near the only suitable landing-place for them that was found on the left bank of the Tigris, at a spot to the north of the Chahaila Mounds and about 6,700 yards from the Turkish position.

* The sun rose at about 5-50 A.M. and set at about 5-50 P.M.

The two 4-inch guns were drawn by their 36 bullocks, assisted by the men of the 48th Pioneers, about a mile further along the bank of the river, the 63rd Battery was moved to a point about 3,000 yards from the enemy's position and 1,000 yards from the river, and the horseboats with the 4.7 inch guns remained near the Chahaila Mounds. Forward observing stations were established for the control of the fire of the artillery, and the River Section of the Ammunition Column was towed up from Abu Rumman, and reached Nakhailat on the 28th.

Although the Turks showed no activity during the night of the 27th-28th they had not been altogether passive on the 27th September, for during the morning and afternoon reports followed one another in quick succession from the officer in command of the post at Abu Rumman that a force of Turkish cavalry and camelmen, with 4 or more guns and 2 machine-guns, was menacing the garrison; and news was received, in addition, that a telegraph launch had been captured, and that 15 *mahailas* (barges) carrying supplies of coal and oil for the use of the steamers had been sunk between Abu Rumman and Shaikh Saad either by the cavalry or by Arabs. Townshend at first ignored this raid, which in reality was advantageous for the execution of his plans, since the bulk of the enemy's mounted men had been removed from the battlefield. But after communicating with General Nixon, he asked the Senior Naval Officer, Lieutenant-Commander E. C. Cookson, to send the Comet at 1-30 p.m. with 25 men of the 48th, to Abu Rumman. This detachment returned in the evening, as the Post had not been attacked.

A more serious incident was the desertion of a havildar and two or three sepoy, but luckily it appears that the information that was given by them to the enemy was discredited.

General Delamain had completed his arrangements for the attack by dividing the infantry of "A" Column into two groups. One of these consisted of the 17th Infantry Brigade, under General Hoghton, with the addition of the 20th Punjabis, the 104th Rifles, and 4 guns of the Machine-gun Battery; and this force was to drive through the gap existing between the enemy's trenches and the Ataba marsh, "with a view to enveloping the left flank of the hostile position and sweeping southwards to the river." The other group, comprising the Dorsets, half of the 117th Mahrattas and the 22nd Company of Sappers and Miners, was simultaneously to deliver a frontal attack supported by the fire of the 76th and 82nd Field Batteries, the 1/5th

Hampshire Howitzer Battery, and two guns of the Machine-gun Battery. The Artillery were to come into action from a position of deployment about 4,000 yards from and to the east of the trenches on the left of the enemy's line; and the Cavalry were to operate on the outer flank of the Column, secure its right, and be prepared to carry out the pursuit.

Half of the 117th were left to guard the 2nd Line Transport and a last reserve of ammunition that remained at Clery's Post. The rest of the troops of "A" Column paraded, with their first Line Transport, at about 1-30 A.M. on the 28th September, each infantryman carrying 200 rounds of small-arms ammunition, 50 more being in the Battalion Reserves, and 50 in the Brigade Reserves. Orders had been given that, on quitting Nakhailat, each man should have on him one day's ration and a full water-bottle, and in addition reserve supplies of water were carried on pack-animals. A start was made at 2 A.M. the infantry of the 17th Brigade Group leading, with an officer of Engineers as guide; next came an Ambulance and 4 Machine-guns, and these were followed by Delamain's headquarters, the 22nd Sappers and Miners, the Artillery, the Ammunition Column, the Cavalry, an Ambulance, 2 Machine-guns, and half of the 117th Mahrattas. The Dorsets acted as flank-guard on the left of the Artillery.

General Hoghton's infantry were formed in pairs of battalions marching in fours abreast of one another; each pair furnished a flank-guard of half a company, and one company moved about 100 yards ahead of the Group as advanced-guard. For a time all went well, as the ground was level although soft and spongy; and until 4-45 A.M. therefore, the troops "plugged on in suffocating dust through the darkness. The atmosphere was damp and heavy, like clammy cotton wool, and at every halt the men would fall asleep at once, some of them as they stood, overcome by the closeness of the air." But a night-march even in a corridor is notoriously a precarious undertaking, and is more than usually so when, as appears to have happened in this case, the maps, which had been compiled on information obtained from airmen, are inaccurate; and, owing partly to interference by Arabs, partly to the desire not to direct the enemy's attention towards this flank, the area to be traversed has not been closely reconnoitred in advance. At 4-45 A.M. then the men of the advanced-guard, who had struck the Suwaikiya marsh apparently at a point about three-quarters of a mile to the east of the posi-

tion where the force was to have halted and deployed, found themselves enclosed by marsh on three sides; and while his troops were moving back out of this blind alley, Hoghton made a report on the situation in person to Delamain. By the time that the units were clear of the marsh, it was 5 A.M. and the darkness was giving place to twilight. Delamain decided, therefore, to send the Cavalry, only three and a half squadrons in all, and these had been weakened by the withdrawal of men for duty as personal escorts, despatch-riders and orderlies, round the enemy's left flank. He also gave orders that the batteries of Artillery, which were to be covered by the 117th and the 22nd Sappers and Miners, should come into action where they stood but facing south-westwards, and that the units of the 17th Brigade Group should deploy, on the right of the guns, for an attack in this direction.

Hoghton therefore ordered his six battalions to deploy at 5-15 A.M. in two lines and in artillery-formation; in front, and counting from right to left, being the 20th Punjabis, the Oxfords, and the 22nd Punjabis; then came the 104th, the 103rd and the 119th, followed by the Signal Section, the Field Ambulance, and the four guns of the Machine-gun Battery. The nearness of the marsh at first prevented the battalions destined to be on the right from getting into the alignment, but apparently the troops were then formed almost if not quite in the positions which, according to General Townshend's intentions they should have reached. Unfortunately the scouts, who were in front of the battalions, now saw the Cavalry trotting forward to reach the outer flank, and followed them, the battalions followed the scouts, and as the Group moved on it was found that there was marsh on the left flank also. It seems that Hoghton at first thought that this marsh was merely a small pool, which had not been marked in the map, but, as the light strengthened, he realised that the units of the Group must be skirting the Ataba marsh, and were some distance from the locality that had originally been chosen as the position for the deployment.

Not long after 6 A.M. General Delamain, who recognised that the two portions of his Column were separating from each other, asked Hoghton to make a report on his movements, and also sent orders that the attack on the enemy's left was to be made in accordance with the instructions that had already been given, and that the troops were not to go further to the north-west. By the time (6-35 A.M.) that this message reached him, Hoghton,

however, was committed to marching round the Ataba marsh. He replied, therefore, that it was too late for the troops to retrace their steps, and that he proposed to move as rapidly as possible round the marsh, and come down behind the Turkish lines. Delamain then sent the 76th Battery to join Hoghton, and again warned him not to go too far to the west. (Map 3.)

It was now evident that some considerable time must elapse before Hoghton's operations could produce any effect on the enemy, but the sound of strong gun-fire, which was coming from the south, showed that the rest of Townshend's plan was being carried out. It is sometimes asserted that difficult problems such as now faced General Delamain can be solved correctly through the use of natural instinct and untrained sense. Napoleon was not of this opinion, and pointed out that it was not some familiar spirit but reflection and preparation that enabled him to act wisely in emergency; and surely it must be evident to those who play cricket, polo, tennis, or golf, that the minor crisis that lend zest to these games cannot be correctly solved, and the proper strokes played, except by those who constantly practise. Equally it is only the minds that have constantly been practised in the consideration of military problems that can hope to face them with any prospect of success in the hour of danger, hardship, fatigue, and anxiety. Even so the event may show that judgment was at fault, for every human intelligence is fallible; but there is evidently a better prospect that the reasoned opinion of a trained intellect will be more nearly correct than one that is formed without any firm basis of either knowledge or practice.

General Delamain was quick to discern that what the Turks, who had certainly been surprised by the British, now required was the time to make new dispositions, and the mistake into which the troops under Hoghton had fallen seemed likely to give them this all-important time. Further, protection and freedom to manœuvre must be gained for the group under Hoghton. It was, therefore, important at any rate to occupy the attention of the troops who were holding the trenches between the Ataba and Suwada marshes; and Delamain boldly resolved that this could best be done by means of a deliberate advance with the small force at his immediate disposal. Meanwhile reconnaissance would be carried out both by an officer's patrol, by an airman, and by two armoured cars, which had just joined him. The Artillery were already prepared to support

these movements, for the 82nd Battery and the 1/5th Hampshire Howitzer Battery had, as soon as it was sufficiently light to do so, registered on the Turkish lines, and also fired a few rounds at a couple of guns that had come into action there.

At 7-45 A.M. while this advance was in progress, Delamain was able to send a message by cable to Hoghton, this was based on the result of the reconnaissance, and was to the effect that he was to push on, since the enemy's position was not held in strength, and at once attack the main force, which was hidden in a hollow behind the southern redoubt (Z). By this time the 117th, who were in front, had reached an area only some 2,000 yards from the Turkish trenches, and had halted there; but, half an hour later, when it was seen in the clear morning light that Hoghton's men were to the south-west of the Ataba, and the sound of rifle fire was heard from this direction, Delamain ordered his units to make an attack. The two companies of the 117th supported by the 22nd Sappers and Miners then went against the northern redoubt (X), and two companies of the Dorsets towards the central work (Y). The two batteries opened fire at a range of 2,200 yards, the 82nd, which was on the right, engaging the X work, while the howitzers bombarded the central redoubt. The armoured cars had meanwhile been sent after Hoghton's detachment, and they reached the Cavalry at about 8-30 A.M.

The two companies of the 22nd Sappers and Miners were soon absorbed into the firing line, for the enemy's resistance was strong, and shortly afterwards the two companies of the Dorsets were also obliged to support the 117th. At about 9 A.M., when a violent dust-storm had commenced, Delamain put in the remainder of the Dorsets, but it was not until 10-15 A.M. that the men of this battalion gallantly carried the northern (X) work, and captured a number of prisoners. As a consequence of this success the central work (Y) was evacuated by the Turks at about 11 A.M.

During these events General Townshend had been watching the action from an observation-tower of scaffolding, which had been set up near the village of Nakhailat; and here reports came in showing that, at about 8-30 A.M., no forward movements were being made by the enemy on the right bank of the Tigris, where the positions were being shelled by the flotilla and the 4.7 inch guns; that the left of "B" Column had reached a point about 1,200 yards from the Turkish trenches lying to the south of the Horse-shoe marsh, and that its right was 1,500 yards

from the entrenchments between the Horse-shoe and Suwada marshes. Delamain had reported by telephone, which had been laid to his headquarters, that Hoghton's force had been obliged to move round the Ataba marsh, but that the attack was being made by the remainder of the Column on the works on the enemy's left, and it was hoped that these would be taken soon after 9 o'clock. The garrison of the post at Abu Rumman were engaging the enemy's horsemen with the 15-pounder gun, and were, therefore, holding fast the bulk of the Turkish mounted troops, which could not fail to facilitate the accomplishment of Townshend's plan. All, then, seemed to be going well.

At about 9 A.M. a strong south-westerly wind began to blow, and this, as has been stated, raised clouds of dust, and not only made the observation of shell-fire difficult, but also partly concealed the movements of the troops on both sides. Owing to their possession of aircraft the British, however, still enjoyed some advantages over the Turks, and although the wind obliged the airmen in the two seaplanes, which had been detailed for the observation of the gun-fire of the artillery of "B" Column, to descend until it fell in the evening, flights were made in the three other machines throughout the battle.

At 10-15 A.M. Delamain reported the success of his attack on the northern and central works, and the news was confirmed soon afterwards by an airman who flew over divisional headquarters firing Very lights. This was the signal upon which the attack of "B" Column was to have been pressed home; but, in consequence of the delay caused by Hoghton's wide movement, these instructions had been modified, and General Fry had received orders not to close with the enemy until it had become evident that the troops in front of "B" Column were being shaken by the advance of Delamain's force. At about 11 A.M. a report was received that a Turkish battalion was marching forward along the right bank of the Tigris towards the Saffa Mounds. The movement, however, was quickly checked by the fire of all the heavy guns, and also of those of the Comet, which steamed forward closely to engage the Turks.

Soon afterwards communication by cable with Delamain was interrupted, and as visual signalling could not be used owing to the dust-storm, the mirage, and the table-like flatness of the ground, and wireless was not available, Townshend was forced to rely on airmen for news of the fortunes of the Principal Decisive Attack. This raises the question whether General Townshend should not preferably have placed his headquarters close to

Delamain's Column, and in a position where he could personally influence its operations. General Townshend has stated in his account of the battle: "General Fry's rôle was clearly given in my General Instructions, so I did not bother about Column "B" whose progress was not only assisted by heavy artillery, but also by the fire of the gunboats on the river, which were echeloned forward so to speak. All my interest was centred in the progress of the turning attack by the Principal Mass under Delamain....." The commander of a large force should doubtless be in a position where he can readily grasp the general situation without being influenced by local incidents, but, "with a small force,* it will be possible and necessary to exercise personal supervision;" and when a small body of troops is making an attack the commander, therefore, should probably be where the decision is to be brought about, as this will be where his authority and guidance will most be required. General Townshend was no doubt well placed at Nakhailat to initiate an unrelenting pursuit, such as had so successfully been made after the battle in May to the north of Kurna; but to gain the victory was the first, the essential, requisite, and it seems, therefore, that his headquarters should have been at or near Clery's Post, rather than at Nakhailat.

It is now time to revert again to the operations of "A" Column. After parting with the rest of the Column Hoghton had, by about 7-30 A.M., passed beyond the northern part of the Ataba marsh almost without opposition, and here a halt was made in order to enable him to take stock of the situation. Not long afterwards communication by cable was established with Delamain's headquarters, and, as has been mentioned above, orders were received that an attack was to be developed against the Turkish supports so as to facilitate the advance that would be made against the left of the enemy's position by the Dorsets, the two companies of the 117th and the 22nd Sappers and Miners. Hoghton now drew up his infantry on a frontage of 1,200 yards as follows: The leading line was composed of the 20th Punjabis, the Oxfordshire and Buckinghamshire Light Infantry, and the 22nd Punjabis, in this order from right to left; in echelon behind the right of the 20th were 6 brigaded machine-guns of the 17th Infantry Brigade, and the 104th Rifles; and the 103rd Mahrattas and 119th Infantry followed in second line, the latter leading, the 103rd in echelon behind their right so as to cover the 76th Field Battery, the 4 machine-guns of the Machine-gun Battery and the Ambulance.

*Field Service Regulations, Volume II, Section 27 (1).

The advance had not been long in progress when the troops came under rifle fire from the west, and both the Cavalry and the commander of the 20th Punjabis reported that 400 of the enemy had moved into a new work lying to the westward of the line of march. This work was fired on with such effect by the machine-guns of the Brigade and two guns of the 76th Field Battery that the Turks attempted to leave it and retreat, but were prevented from doing so by our bullets and shells. The 104th were then sent in this direction and easily captured the work, 112 of the enemy being taken prisoners. A Turkish battalion, which was advancing to the support of the men in the work, was also caught when in close order by the machine-guns of the 17th Brigade and dispersed. While this attack was being made Hoghton again sent a report to Delamain by telephone, the last that could be made in this manner for the cable had now been run out to its extreme length, and in reply was told that the attack on the northern (X) redoubt had begun, and that he was to push on. Hoghton then, at 9 A.M. directed the 103rd to move, with the 4 machine-guns of the Machine-gun Battery, against the rear of the northern work, and the 119th, supported by the Oxfords, towards a communication-trench leading apparently from the central work. These three battalions, and the machine-guns, subsequently passed under the orders of Delamain. The 22nd Punjabis had meanwhile continued to move southwards, but soon came under rifle-fire from troops in the dry Dahra Canal, as well as gun-fire from the direction of the southern work (Z), and turned, therefore, to attack these enemies. Not long afterwards the 20th Punjabis reported to Hoghton that a force of Turks was advancing from the south-west. Orders were sent, in consequence, that the battalion was to remain in observation on the right flank, while steps were taken to concentrate the 104th, the 22nd Punjabis, and the brigaded machine-guns, with the intention of sending them against this force.

At about 10 A.M. Hoghton received orders from Delamain that the Turks were to be attacked wherever met with. Hoghton, therefore, returned their machine-guns to the 22nd Punjabis, and, leaving them to carry out the attack against the Turks in the Dahra Canal and southern work, marched with the 20th Punjabis, 104th, and the rest of the machine-guns of the 17th Brigade, as well as the 76th Battery, against the force that had appeared to the south and south-west. The advance of these

troops, who were perhaps the whole or part of the reserve of 4 battalions that had been sent to the right bank on the 27th September, was now being covered by accurate shrapnel-fire ; and they seemed also to be supported by a body of mounted men, who may, however, have been our own cavalry. At this moment, as the noise of firing showed, the attack on the works on Hoghton's left was at its height, but, owing to the wind, the dust that was blown up by it, the dust that was being raised by our shells, and the mirage, it was not possible to judge whether progress was being made. Although they suffered loss Hoghton's men gained ground steadily, and, at about noon, the 22nd Punjabis drove back the troops who were opposing them, and the whole body of Turks retired to another position. A pause then ensued as Hoghton was summoned to confer with Delamain, who ordered him to press on with the attack.

Meanwhile the operations of the troops immediately under Delamain had developed as follows : The Dorsets and the two companies of the 117th had first occupied the central work (Y). The 110th, with the close support of the 82nd Field Battery and 1/5th Hampshire Howitzer Battery, had, with the assistance of portions of the 103rd, one company of the Oxfords, and the Machine-gun Battery also taken the trenches lying to the west of that work and two of the enemy's guns. An advance had next been made against the garrison of the southern (Z) work, but, in the absence of close support by gun-fire, the British were unable to carry it at first. At about 1 P.M., however, and in spite of a strong counter-attack, two companies of the Oxfords, two of the 119th, one of the 103rd, and one of the 117th, rushed the work with the help of the fire of the Machine-gun Battery, and of the Artillery which came into action within a mile of it and also kept up a powerful and accurate fire when the assault was in progress. Two hundred prisoners fell into our hands during these actions, and some time was necessarily spent by General Delamain in collecting them, and in reorganising his units.

At about 1 P.M. Hoghton, who had also reformed his battalions, and replenished ammunition, again advanced with the 20th Punjabis, the 22nd Punjabis, and the 104th, supported by the 76th Field Battery which engaged the enemy at ranges varying from 3,000 to 4,000 yards. The Turks fell back before Hoghton's troops, and it seemed to him as if units of the enemy's forces

were continually moving across his front on both banks of the river. By about 3-P.M. the physical energy of Hoghton's men had almost been exhausted by prolonged exertion under a very hot sun, combined with lack of drinking-water, and the guns of the 76th Battery were short of ammunition. He halted, therefore, probably at a point not more than two miles from the Tigris, and to the west or north-west of the Horse-shoe marsh, in order both to reconnoitre, to rest the men, and to replenish with ammunition; and in consequence sent both for the Brigade small-arms reserve of ammunition and for the animals carrying water-panniers. The troops, who apparently closed to a dense formation, then unexpectedly came under strong and accurate shell-fire from the south, which caused casualties among both the infantry, gunners and animals of the 76th Battery and machine-guns; but worse still stampeded those carrying the small-arms ammunition and water. Hoghton at once ordered a withdrawal to be made in a northerly direction, where the rest of "A" Column could be distinguished. Here also there appeared to be a dip or hollow in the ground where cover, and perhaps water also, could be obtained.

After leaving the 119th, who had suffered a good many casualties, in the southern work, for the purpose both of securing his communications with Clery's Post and guarding the prisoners, Delamain had, meanwhile, moved forward at 1-30 P.M. with the object of gaining the bank of the Tigris, where drinking-water would be obtained, and during this advance his guns fired intermittently, when a target could be distinguished, at ranges of from 3,000 to 4,000 yards. At about 3 P.M. the enemy opened heavy and accurate shell-fire on the troops with Delamain, and, finding that the Turks were in strength and full of fight, he too turned back to try and obtain drinking-water in the Suwada marsh, which, however, proved to be undrinkable. A junction with Hoghton was finally made in the hollow between 3-30 P.M. and 4 P.M.

The Cavalry and armoured cars had come in to Delamain at about 2-30 P.M. After chasing away some of the enemy's horse-men at 8 A.M. the Cavalry had gone in pursuit of the troops who had been driven out of the new work by the 104th. Continuing to advance southwards they eventually reached a point only some 1,200 yards from the Turkish bridge of boats; where the ground, however, was so much broken and intersected by irrigation channels as to prevent the delivery of a charge. Soon afterwards

they were forced to retire by Turkish infantry who were supported by artillery; and it seems that, in the course of the withdrawal, they were shelled by our guns, having been mistaken for Arabs. They then remained for some time in observation on the right of Hoghton's force. Delamain ordered the armoured cars back to Clery's Post, which they reached after engaging a few groups of Arabs on the way. But the Cavalry, like the rest came under the enemy's artillery fire at 3 P.M.

During these operations Delamain had sent a report to Townshend at about 11-30 A.M. by an airman, who had flown to him from the headquarters of the Division, that his Column had advanced towards the Suwada marsh. Just before noon another report was made that casualties had been heavy and progress was now slow, and the suggestion was submitted, in consequence that "B" Column should relieve the pressure on "A" Column by closing with the Turks. To this Townshend sent the reply, by an airman, that Delamain should try to gain ground by outflanking the enemy. At the same time Fry received orders to push on if possible. Fry, however, represented that it was not yet possible to deliver a decisive attack, but said that he would press the enemy hard. The men of the 18th Infantry Brigade went forward, therefore, supported by the fire of all the artillery that had been allotted to the Column. The troops were in the following order: The 7th Rajputs, who were on the left, were held back a little owing to enfilading fire to which they were exposed from the right bank of the Tigris; the 120th were in the centre, then came the 110th, and finally one company of the Norfolk Regiment covered the right, the remainder of this battalion being in reserve. Progress could only be made slowly in an attack delivered on so great a frontage and with so little depth; but, by 4 P.M., the centre and right of the Brigade had established themselves within 900 yards of the entrenchments lying between the Horse-shoe and Suwada marshes.

At 1-45 P.M. Townshend again received a report from Delamain through an airman, which presumably was sent after his interview with Hoghton, that the whole of the enemy's position to the north of the Suwada had been won, that two counter-attacks had been defeated and a number of prisoners captured, and that he had reunited his Column and was resting the troops who were much exhausted. As no effective advance had meanwhile been made, Townshend, who naturally had become impatient, sent an airman at 3 P.M. or 3-30 P.M. to ascertain and bring news of the doings of "A" Column. The airman did not return for nearly two

hours, and he then brought a message that Delamain was about to attack the entrenchments between the Suwada and Horse-shoe marshes, and desired that every gun should be turned on to this section of the position so as to support the advance of his men. As the fire of the guns of "B" Column might, if directed on these entrenchments, have checked the movements of the infantry of "A" Column, whose positions could not accurately be ascertained, a strong, but as it turned out rather useless, bombardment was now made on the trenches between the Horse-shoe marsh and the river; and this was continued until daylight failed.

At about 5 P.M. in spite of the exhaustion of the infantry, Delamain launched his final attack round the south-western portion of the Suwada, with the object of taking the enemy's position in reverse. The 17th Infantry Brigade now advanced on a frontage of 750 yards, with the 22nd Punjabis on the left and the Oxfords on the right of the first line, and the 103rd and brigaded machine-guns in support; but the 119th were still left in the southern work so as to secure the rear of "A" Column, and therefore its power of manœuvring freely, and also to safeguard the communications with Clery's Post. In echelon behind the right of the 17th Brigade, and covering the three Batteries, the Sappers and Miners, and the transport, came the 16th Infantry Brigade; and this was formed with the 20th Punjabis and the 104th Rifles in front, and the Dorsetshire and the two companies of the 117th in reserve. The Machine-gun Battery moved on the right of the 16th Brigade and Artillery, and the Cavalry were ordered to guard the right flank of the Column. (Map 4.)

The wind had now dropped and the atmosphere had begun to clear, so that the conditions were more favourable for the co-operation of the two British Columns in an effort to clear the trenches lying to the south of the Suwada by means of the most effective form of attack, that from two directions. "A" Column at first was not opposed, and when the units of the 17th Brigade reached an area about 3,000 yards westward of the enemy's positions, Delamain sent a message by an airman to Fry that the attack would be made in an easterly direction, whence the noise of battle was coming. But, no sooner had the airman gone than a force of five battalions of Turkish infantry, some machine-guns, and a battery of artillery, which were in all probability withdrawn from the right bank of the Tigris, came suddenly into view, a mile or more away, marching towards the Horse-shoe

marsh. It seems that the Turkish infantry now extended to their left and occupied one of the many irrigation channels that lead from the Tigris. General Delamain, therefore, at once directed the 17th Brigade to wheel to the right and attack the enemy with the support of the 16th Brigade. The Machine-gun Battery and the brigaded machine-guns of the 17th Brigade meanwhile had promptly come into action, and the artillery had also quickly unlimbered in the open, as there was no time either for digging or to look for cover, and opened fire at 2,300 yards. Although observation was difficult owing to the fact that the sun was setting directly behind the Turks, our gunners immediately found the range and dispersed the enemy's gun-teams; they then turned on the four guns of the Turkish battery which were now firing, and, when our infantry were seen to be advancing, on the Turkish infantry's position.

Following the fine example set them by the Oxforas, the remaining battalions now went rapidly forward in successive lines of companies, through long grass and over a plain that was much broken by shallow, disused irrigation channels, and at once came under a very heavy but fortunately ill-directed fire. Under cover of so rapid a shell-fire from our guns that the smoke formed a halo over the enemy's position, the advance of the infantry was made almost wholly at the double, and the five leading battalions were soon merged into a solid mass, with the Dorsets and 117th in close support and the machine-guns not far behind. There was but little rifle-firing on our side and none at all until the men were within close range of the Turks, and the main object of all ranks was to close with the enemy and end the matter. "It was hard," writes Captain Birch-Reynardson, "to see exactly where and what our enemy was, for we were moving through long grass straight into the eye of the setting sun; all that could be seen were the flashes from the battery they had brought into action, while the sound of bullets showed that there were plenty of them. The attacking waves went forward. An hour before, the men had been dead beat with thirst, tired out, dropping, and lying where they dropped, with little thought of anything but water; now, as if a new lease of life had been granted them, they swept on in an attack at a pace which in the peaceful days of manœuvres would assuredly have been criticised as impossible under real conditions. The guns had ceased to fire for want of light, but the infantry went straight on over the flat ground with never a halt, straight into the blinding streak

of sunset; a thousand yards, a charge nearly all the way, brought them into their enemy, and, with a cheer, they went at them. Some got away, some were bayoneted, and the rest, together with a battery of guns and two machine-guns were captured; and then night shut down suddenly like a curtain."

This achievement proves the truth of the principle that, once aroused, men will in the mass sometimes accomplish deeds of endurance that none of the individuals would attempt if left to themselves. Weight of numbers also notoriously supplies a feeling of confidence and a sense of power to overcome obstacles; and the turmoil of a charge tends to create a belief that each man is merely part of a quick-moving machine, which is operating under the impulse of some greater and irresistible force, and this again lends power to the whole.

Towards nightfall General Townshend had been joined at the observation post by Sir John Nixon, who, however, did not in any way interfere with his decisions. After listening with Nixon, to the sound of Delamain's last action, and learning that the men of "B" Column had not taken the trenches between the Horse-shoe and Suwada marshes but were still struggling forward, Townshend gave orders for a couple of companies and a machine-gun section to be sent by river to the post at Abu Rumman, which was still being menaced by Turks and Arabs.

Several courses were now open to the British, but, broadly speaking, Townshend had to choose between waiting on events or trying to control them, that is the attack might be suspended or continued. Before making a decision a General must evidently first try to bring together the various factors of the situation in his mind, and then endeavour to look at things exactly as they are, and to give to each its proper place and value. Townshend was aware that the troops under Delamain had by nightfall reached the area behind the front of the Turkish group that was facing the 18th Infantry Brigade. He knew that Delamain had intended to attack the position to the south of the Suwada in rear, and that a sharp fight had developed at sunset but had ceased when darkness fell; and he was without information as to the result of this action, but was aware that "B" Column had not been successful. He had also heard that, before this fight, the troops of "A" Column were physically exhausted. Since communication with Delamain had during the greater part of the day been kept up by airmen, it was

not likely that further news would soon come in from him ; and the whole country was infested by marauding Arabs who might altogether stop the movements of any messengers that were sent out from or to " A " Column. As regards the remainder of the force, the men of " B " Column and of the two battalions of the 30th Infantry Brigade were at least as fresh as those portions of the Turkish army that had not earlier in the day been defeated by " A " Column, and the British were of better quality. These unbeaten Turks were certainly in strong entrenchments ; but the troops on the northern bank of the Tigris could not be ignorant of the defeat of their left wing, and of the fact that, at sunset, a body of British had gained their line of retreat, which necessarily would lower their confidence in themselves. The Turco-Arab cavalry were still at Abu Rumman, some miles from the field of battle.

Like many another General, then, Townshend had now, after inferring the probable from the apparent, to make a momentous decision, and to do so in circumstances that were adverse to balanced judgment; for he had passed through a trying day, and, as he himself has written : " No one knew—I am sure that none of my staff did—how very anxious I had been over the success of the turning attack and its unaccountable delays. The apparent facts were that Delamain's troops, after defeating the enemy's left wing, had again been sharply engaged, but not with the Turks who were in the trenches to the south of the Suwada since Fry's attack on them had not been successful ; it was not impossible that " A " Column had then been beaten, but, in spite of the physical condition of the men, the course that had previously been followed by the battle made this somewhat unlikely. It was more probable, therefore, that the units of Delamain's force had either been checked, or that they had repulsed a counter-attack by the Turks.

In favour of a decision to wait for information, and that would also be to wait upon the actions of the enemy, it might be argued that the 18th and the half of the 30th Brigade would be in hand and available to meet the situation that would be disclosed when news from Delamain arrived or day broke ; and that a commander should not irrevocably commit all his troops to action while matters are still obscure. But in time of war the situation is rarely clear until the moment to influence events has passed, and a leader, therefore, must make decisions before full knowledge is available.

The other alternative was to continue the attack, to send in with the 18th Brigade every available man, the last reserve, the greater part of the two battalions of the 30th Brigade, for a few troops must be left to guard the bridge and camp, the Naval flotilla ; to stake all on the success of this venture, to rely for security, for the safety of the transports, for freedom of " A " Column to manœuvre, on forcing the Turks to parry blows and on beating down their guard ; and to look to the enemy's difficulties rather than at his own. It is true that if the force under Fry were repulsed the situation would be serious, but not in reality more serious than if Fry were inactive and Delamain had been beaten ; for, at worst, Fry's attack would assist Delamain to draw off and rally his men ; and the fact that the British were still continuing to attack would certainly impress the enemy and lessen their elation at the defeat that had been inflicted on the enveloping force. If the troops under Delamain had merely been checked, a vigorous attack by the rest of the British force would, even if unsuccessful, prevent the enemy from turning on Delamain ; and if the Turks held on to their positions to the south of the Suwada, the situation at daybreak would be all in favour of the British ; who, if Delamain were able to be supplied with sufficient water to enable his troops to remain in the area to the west of the Suwada, would almost have enveloped the force that was on the northern bank of the Tigris. In such circumstances it was also most unlikely that an attack would be made by the enemy along the other bank of the river. If Delamain had been checked, but the Turks were driven back by the group under Fry, the British would probably gain a great success ; since it would be difficult for the enemy either to bring away guns or reform troops, if, as was to be hoped, Delamain's column was standing to the west of the Suwada. And if Delamain's group had repulsed a counter-attack by the Turks it would almost certainly be in the area to the south-west of the Suwada ; and then a strong attack by the remainder of the British force would, if unsuccessful, either make difficult or prevent the withdrawal of those Turks who were still in position between the Suwada and Tigris, and the British would then win a great victory on the 29th September ; and at best, that is if Fry broke their lines, the enemy's forces would be annihilated.

It is, of course, not difficult to argue like this, and to contrive and dare on paper ; but it is a very different thing to be able to decide in the moment of crisis in favour of what after the

event may seem to be the wisest, or even the obvious, plan. And it is through overlooking this enormous difference that earnest writers are betrayed into scathing generalizations against the "fumbling campaigns" of the past, and "feel overwhelming pity at the thought of wretched men who were called upon at the call of duty and patriotism to lay down everything and to lay down everything uselessly."

The action that was taken by General Townshend was as follows: Soon after 6 P.M. his aide-de-camp was sent to the Senior Naval Officer, Commander Cookson, to ask whether the armed ships could make an effort to break the obstacle that had been placed across the Tigris and push on to Kut-al-Amara, where their presence could not fail strongly to affect the *moral* of the enemy; Townshend then went on board the *Medjidieh* at 6-45 P.M. Meanwhile the two seaplanes had made short flights in the evening, one airman taking a map of the supposed positions of the British troops to Cookson, the other reconnoitring up the river.

Lieutenant-Commander Cookson at once took steps to comply with Townshend's request, and set off in the darkness with the *Comet*, *Shaitan* and *Sumana*, to try and clear away the obstruction. After coming under strong fire from both banks of the river the ships were stopped by the steel cable that had been stretched, over a *mahaila* floating in midstream, between two iron barges, which were aground on opposite banks of the Tigris. The *Comet* at first tried to break the cable by ramming it. When this failed Cookson himself made a very brave effort to cut the cable with an axe; and it was not until he had been killed in the attempt, and every man on board the *Comet* wounded, that the vessels fell back a little. They continued, however, for some time to engage the enemy at close range, and in the end sunk the *mahaila* with gun-fire.

The attack of the 18th Infantry Brigade on the positions to the south of the Suwada marsh was continued until nearly 9 P.M., but met with such vigorous resistance that little could be effected, and the troops were checked when about 500 yards from the Turkish line. As no news had come in from Delamain, and it was doubtful whether any marked change would now take place in the situation owing to the action of "A" Column, Fry was then told to break off the fight, place outposts and entrench. Beyond informing Fry that the headquarters would be nearer to "B"

Column on the 29th, and ordering a strong patrol to be sent out early on that date along the right bank of the Tigris by the commander of the two battalions of the 30th Brigade, for the purpose of finding out whether the Saffa Mounds were still held by the enemy, Townshend issued no other instructions; nor was an attempt made by means of officer's patrols to get into touch with Delamain. "B" Column were not disturbed during the night, but its patrols found the Turks still in position in the early hours of the morning.

The men of "A" Column also were not disturbed, but passed an uncomfortable night. The Cavalry were unable to find the rest of the Column, and, after spending the earlier part of the night in looking but without success for water for the animals, bivouacked at midnight, the horses being now much exhausted, and the men were without food. After putting the irrigation channel, from which the Turks had been driven, into a state of defence, and posting sentries, Delamain sent off one patrol, consisting of a mounted officer and a few men of his personal escort, with a report for General Townshend; but they failed to reach him, for all their horses were shot by marauding Arabs, although the men themselves escaped injury. The greater part of the infantry lay during the night huddled in the bed of the channel, for the air was cold (the temperature fell 50°), the men, according to Captain Birch-Reynardson, being "so dead-beat that they literally could not understand an order; thirst and exhaustion had produced a stupifying effect." Many wounded were still on the ground and it was necessary to find and protect them from Arab plunderers; and, in spite of cold, thirst, and fatigue, individuals readily responded to the call for volunteers for this duty.

As neither leader took strong action during the night of the 28th-29th September, the result of the battle became a question of character; namely which of the two would best stand the anxious strain. General Townshend was victorious in this contest, and as he left the observation post at 6-30 P.M. he said to Sir John Nixon, "I know they'll go in the dark." The conjecture proved to be correct, but the fact that the enemy had vacated the position was not ascertained until 5-30 A.M. on the 29th September.

As soon as there was sufficient light the airmen went up to reconnoitre on the 29th and to be ready to observe, if necessary, the fire of our artillery. The first news, however, that came in

to headquarters was, at 6-40 A.M. from the post at Abu Rumman, that the garrison had not been attacked. A few minutes later a message was received from Fry that "B" Column had occupied the Turkish position between the Suwada marsh and the Tigris; and the 30th Brigade then sent words that the Saffa Mounds and the country in their neighbourhood were clear of the enemy. At 7 A.M. an airman, who had already informed "A" Column that the Turks were in retreat, flew back with the news that the units of this Column were marching to the river.

Before the battle General Townshend had issued instructions as to pursuit in the event of a British victory. Under these it was proposed that the armed vessels, and the river steamers, which were to carry the 18th Infantry Brigade, the 63rd Field Battery, the 17th Sappers and Miners, and certain Ambulance units, should at once follow the Turks. At the same time the Cavalry were to pursue them laterally, and, while continually operating against their outer flank, were to try and head them off from Baghdad. At 8-20 A.M. further orders were issued that General Delamain, with the Cavalry, the Artillery of "A" Column, the 16th Infantry Brigade, and the 22nd Sappers and Miners, was to move to Kut-al-Amara, and was to be followed by the Heavy Artillery, the Land Section of the Divisional Ammunition Column, and the 48th Pioneers, who were to come under his orders. The two battalions of the 30th Brigade and the Bridging Train were to remain at Nakhailat, the 17th Brigade and the Machine-gun Battery were to guard the Ordnance Field Depot and help to clear the battlefield, and all Ambulances, except one which was to stay at Nakhailat, were to rejoin their Columns.

As soon as these orders had been sent out the *Medjidieh*, with Townshend on board, went up stream followed by the *Blossie*, *Lynch*, *Julnar* and *Mosul*; and during the voyage Townshend received a report from an airman that the Turks were retreating up both banks of the Tigris; that on the left bank, and ten miles above Kut-al-Amara, there was a formed body of men four miles long and marching north-westwards; that bombs had been thrown on a steamer and tug off Kut-al-Amara, which apparently were unable to move; and that the Comet had passed both the obstruction and Turkish bridge of boats, and was firing at other Turkish vessels as they steamed away. The obstruction was reached by Townshend at about noon, and, after slowly passing it, the ships drew in to the left bank of the Tigris. The embarkation of the 18th Brigade Group and 63rd Battery, which had marched

up the bank of the river as soon as it was seen that the steamers were in motion, then began. Owing to the necessity of cutting a road in the steep bank of the Tigris, and then to the difficulty of getting animals and vehicles on board, it was, however, not completed until late in the afternoon; and a start could not be made until 5-30 P.M. The vessels then went forward for a short distance and tied up for the night, at 10-30 P.M. just above the rickety Turkish bridge of boats.

Meanwhile orders were again issued by General Townshend at 3-30 P.M. In these it was stated that, owing to the destruction by the enemy of barges carrying coal and oil-fuel, pursuit would only be undertaken by the 18th Brigade, the 63rd Battery, half of the 17th Sappers and Miners, and one Bearer Division of a Field Ambulance, which were to embark at once; and also by the Cavalry regiments which were to advance along the left bank of the Tigris. The remainder of the 6th Division were, under the orders of Delamain, to concentrate at Kut-al-Amara, the 17th Brigade moving there after the wounded and prisoners had been sent down the Tigris. It was notified that the Zone of the Line-of-Communication-Defences would extend as far as Kut-al-Amara and that the two battalions of the 30th Brigade were again to become Line-of-Communication-Defence troops under the orders of the Commander of the 12th Division.

Kut-al-Amara had, in the interval, been occupied by the Cavalry, who were accompanied by one Section of Field Artillery, and these troops obtained food for man and horse by requisition, since their 2nd Line Transport had not reached them. The pursuit was not continued as the steamers had not arrived, and the units went into bivouac, at 2 P.M., in the palm-groves near the town.

The River Column, the *Medjidieh* and her consorts, steamed on again early on the 30th September, but, owing to a sudden fall in the level of the water in the Tigris, all went aground near Kut at 5 A.M. It was four hours before the ships were got off the shoals, but, at 10 A.M. they again grounded and this time were not refloated until nightfall. News had come in during the morning from an airman that the Turks were retiring in good order and were 35 miles up river. Orders, in consequence, were sent out, at 9 A.M. for the Cavalry to follow the enemy, with the support of the *Comet* and *Shaitan*, which were still in touch with them; but the *Sumana* had run aground eight miles about Kut-al-Amara.

The 7th Lancers and 16th Cavalry started accordingly, at 10 A.M. and marched inland along the telegraph line connecting Kut-al-Amara with Baghdad, sending a detachment to follow the bank of the river. After some slight encounters with Arabs the two regiments halted at sunset near the village of Imam Mahdi, but the Julnar, which should have brought ammunition and food to them, was not able to reach this place. (Map 1.)

The ships of the River Column did not sail again until 9 A.M. on the 1st October, and even then the Julnar was left behind. The rest made fair progress, with the assistance of the Comet which returned to escort them, banking in on the left bank of the river at 6 P.M. about eight miles short of Bghaila. Touch was not obtained with the Cavalry, but, during the morning, our airmen reported that the Turks were still retreating up both banks of the Tigris, and that there were a couple of steamers at Aziziya. Next day an early start was made by the shipping, but, so shallow was the river that progress was only possible after the troops had been landed, and they then marched to Bghaila. The leading ships did not reach the town until 4-30 P.M., the Julnar being still a straggler; and after the men had re-embarked there was only time to steam three miles before nightfall. A report as to progress was then made by wireless to the Headquarters of Sir John Nixon, which were installed at Kut-al-Amara. An airman meanwhile went up in the evening from Kut-al-Amara and ascertained that the head of the enemy's column on the left bank was only 13 miles short of Ctesiphon, the column on the other bank being a couple of miles further back. A cavalry camp was also seen at Aziziya. This information reached Townshend at 7 A.M. on the 3rd October, and half an hour later a patrol came in from our Cavalry, who were at Shidhaif-as-Sharki, with a report that the men and horses were almost tired out.

The Cavalry had gained the neighbourhood of this place on the afternoon of the 1st October, and here they found two abandoned *mahailas*, which had been loaded with ammunition. While the horses were being watered in the Tigris, some of the enemy, perhaps the troops who had raided Townshend's communications suddenly opened strong rifle-fire from the right bank, and later on two guns came into action there. The Cavalry, therefore, retreated for two or three miles, fortunately without having suffered many casualties, but it was not found possible to obtain food for either men or horses until the next morning. Since he was without support from

the rest of the force, and since both cavalymen and their animals had been on half-rations for three days, and no supplies could be obtained locally, the commander of the little group of cavalry decided to move back half a dozen miles to some villages where a small quantity of food was found. On the 3rd October rations were collected from other villages lying close to the river, and, in the afternoon, the troops were glad to see the smoke of the river steamers, to which a patrol was then sent.

The report of the morning's reconnaissance by air came in at 10 A.M. on the 3rd, and Townshend then learnt that the enemy were moving into a position that had been prepared at Ctesiphon, that this was already occupied in some strength, and that there were Turkish troops between Aziziya and Suwaira. In the evening the ships, except the *Shaitan* which stuck fast at Bghaila on her way down to Kut-al-Amara for oil-fuel, stopped near Shidhaif-as-Sharki, and were joined by the Cavalry. Next day the Cavalry occupied Aziziya at 2-30 P.M. and here news was obtained of the presence, on the 3rd October, of columns of Turks near Lajj on the left bank, and Abdulla on the right bank of the Tigris. The River Column did not reach Aziziya until the evening of the 4th, and three battalions were then disembarked on the left, and one on the right bank, of the river.

It may be said that the operations that were begun for the purpose of winning Kut-al-Amara ended with the occupation of Aziziya. Every battle between trained armies is made up of a series of small but combined actions. In any one of these an error of judgment, and tired men are very susceptible to error; a little timidity, and fatigue and thirst soon dull a man's courage; some ill-timed daring, which has resulted perhaps from nervous tension and the consequent desire to end the matter one way or the other; or an act of unwise obstinacy, due it may be to personal pride; may ruin the plans of the commander of a force. This, then, is the reason why the simple plans, in which the opportunities for error are reduced to a low limit, are most likely to be crowned with success; for, as has been pointed out, faults of execution such as occurred in this action, are almost certain to spoil so extensively combined a manœuvre. On the other hand the art of war in tactics consists largely in manœuvring; and, if manœuvre were possible, it would be mere bludgeon-work, not art, to adopt a plan so simple that only a front to front action would result.

Apart from the merits and disadvantages of his plan, it cannot be denied that General Townshend experienced both good and ill-fortune on the 27th and 28th September. It was lucky, for instance, that the Turks detached the bulk of their horsemen to raid his communications, and in consequence facilitated the task of Delamain's Column. The influence of the dust-storm on the 28th was, on the whole, unfavourable to the British; for, although their movements were concealed, the dust prevented the close co-operation that was necessary for the attainment of complete success, and the fire of their superior artillery could not be exactly regulated. The manœuvres of the Turkish troops were also masked, and their counter-attacks facilitated.

Although decisive success was denied to General Townshend, his daring plan received a reward in due proportion to its boldness, and he could claim to have given the Turks a good beating. The enemy lost 1,153 prisoners, and perhaps 3,000 in addition were killed and wounded. They apparently used in the battle 31 guns, of which 3 were heavy guns, 2 howitzers, 8 quick-firing field guns, 16 old-pattern 15-pounder field guns, 2 mountain guns, and 7 old muzzle-loading cannon; and they left in our hands 6 or 7 field guns and the 7 muzzle-loaders. On the other hand the losses of the British were fairly heavy, 94 officers and men being killed, and 1,139 wounded, the large majority of whom belonged to "A" Column.

APPENDIX.

(First published with Part I of this article.)

ORDER OF BATTLE.

TURKISH FORCE.

35th and 38th Divisions, and some additional units, under Nur-ud-din Pasha. It is said by the Turks to have consisted of: About 6,000 infantry (one-quarter of whom were Turks, the rest being Kurds and Arabs, with some Jews under Turkish officers), 600 Cavalry and Camelmen, and 3 heavy guns, 2 howitzers, 8 quick-firing field guns, 2 mountain guns, 16 15-pounder guns, and 7 muzzle-loaders; and also 40 machine-guns. A tug, the Pioneer, belonging to a British firm, had been seized on the outbreak of war, and had been crudely armoured and armed with one or more guns. From 1,000 to 3,000 mounted

Arabs assisted the Turks; and the whole battle-area was infested with armed Arab marauders, who were generally on foot.

BRITISH FORCE.

Naval Detachment.—The Comet, a yacht, armed with one 3-pounder gun and 3 Nordenfeldt guns. The tugs Shaitan and Sumana, which had been armoured against rifle fire, each armed with one 12-pounder gun, one or two 3-pounder guns, and one Maxim Machine-gun. Half a dozen launches; and 2 seaplanes.

Military Force.—The 6th Indian Division, with other troops. The combatant strength was from 10,500 to 11,000, and of these 3,000 were British and 8,000 Indians. The men of the Artillery were British.

The fighting units comprised—

Infantry.—The 16th Infantry Brigade.

2nd Battalion, The Dorsetshire Regiment.

The 20th Punjabis, (now The 2/14th Punjab Regiment).

The 104th Rifles (1/6th Rajputana Rifles).

The 117th Mahrattas (5/5th Mahratta Light Infantry).

The 17th Infantry Brigade.

1st Battalion, The Oxfordshire and Buckinghamshire Light Infantry.

The 22nd Punjabis (3/14th Punjab Regiment).

The 103rd Mahratta Light Infantry (1/5th Mahratta Light Infantry).

The 119th Infantry (2/9th Jat Regiment).

The 18th Infantry Brigade.

2nd Battalion, The Norfolk Regiment.

The 7th Rajputs (3/7th Rajput Regiment).

The 110th Mahrattas (3/5th Mahratta Light Infantry).

The 120th Infantry (2/6th Rajputana Rifles).

The 30th Infantry Brigade.

The 76th Punjabis (3/1st Punjab Regiment).

The 2/7th Gurkha Rifles.

The 48th Pioneers (4/2nd Bombay Pioneers).

The infantry possessed 33 machine-guns.

Cavalry.—The 7th Lancers (18th King Edward's Own Cavalry) two squadrons with 2 machine-guns.

The 16th Cavalry (6th Duke of Connaught's Own Lancers)
one and a half squadrons.

Artillery.—The 10th Field Artillery Brigade.

The 63rd, 76th and 82nd Batteries, and Ammunition Column
(eighteen 18-pounder).

The 1/5th Hampshire Howitzer Battery (four 5-inch
howitzers).

The 86th Heavy Battery (four 5-inch guns).

One section of The 104th Heavy Battery (two 4-inch guns).

Four 4·7 inch guns in horse-boats.

One 15-pounder gun, and 6 Nordenfeldt guns, used for the
protection of post and camp.

Other Troops.—One 6 gun Pack Machine-gun Battery
(Maxims).

Two armoured cars, each armed with one Maxim Machine-
gun.

The 17th and 22nd Companies of Sappers and Miners.

The Bridging Train.

The Search-lights.

The Divisional Signal Company.

The Divisional Ammunition Column, part on land, part in
barges.

The Engineer Field Park.

The Divisional Supply Column.

One Flight of 4 Aeroplanes.

River Transports.—The Medjidieh, Blossie Lynch, Julnar,
Mosul, P. 4, as Ambulance ship and one Ambulance launch.
One barge or lighter was generally lashed to each side of a
steamer, and one steamer, with its barges, could carry 1500 to
800 infantry or a battery, or about three troops of cavalry.



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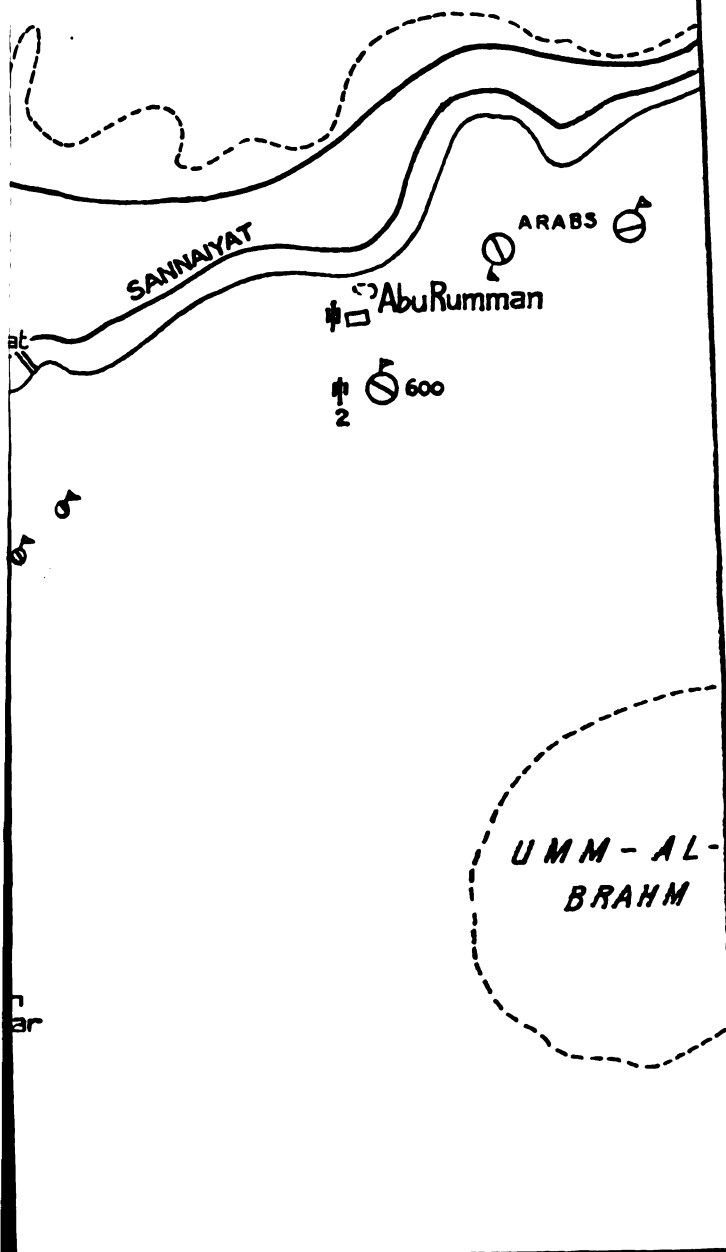
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MAP 4

Scale 2 3 4 Miles

TURKS 
BRITISH 

W A I K I Y A



THE TRAINING OF A BATTALION IN THE INDIAN ARMY.

By Lieut.-Colonel G. B. Scott, D.S.O.

Most soldiers will agree that the experience we have reaped during the War has enabled us to evolve a higher standard of training than obtained upto 1914. This standard is marked by a development of individual training, an improved armament and technique and an understanding and cohesion between the various parts of the military machine which show that our evolution is progressing in the right direction. The improvement has been general through all arms of the service and it may be of interest to examine its working in detail as shown in a battalion of the Indian Army. Upto 1914, in my battalion, as in most others, the instruction of trained soldiers was carried out almost entirely by the British Officer. Indian Officers looked after the interior economy of their double companies and controlled them on parade, but neither they nor the N.-C. Os. had the knowledge which would have enabled them to train their men on individual lines. Men were trained in the mass, and the training of the individual was mostly left to the musketry and other military schools. Such specialists as were evolved by the schools, returned to their units and, more often than not, relapsed into their original obscurity. Of course this was very wrong and the authorities' fulminated from time to time, but all in vain. The trouble lay in the lack of system, and, where there was no system, it was useless to graft specialists. The training of battalions was conducted on dull routine lines, with a few brilliant exceptions. Recruit training absorbed the energies of the Adjutant, and, as battalions were and are short-handed in the matter of British Officers, this meant that no officer was available for the training of an instructor staff. It should have been obvious that without capable instructors and a well ordered system of teaching, there could be no advance beyond a respectable mediocrity, but somehow this defect passed unnoticed. The training battalion system introduced since the war, has proved a blessing in disguise. Active Battalions are now relieved of the necessity of training their own recruits, and commandants and adjutants are able to give their attention to the training of an instructor staff.

In my battalion, under the new system, the Adjutant was at first allotted the duty of training classes of young or presumptive N.-C. Os. with a view to giving them a good all-round knowledge of their profession. The intention was that, on return to their companies, these men should in turn be used as instructors. The system proved a failure; not for want of any keenness on the part of company commanders. Nor were the men lacking in enthusiasm. The trouble was that their brains were overloaded. They suffered from a species of mental indigestion. Their thoughts did not run in clear channels and when confronted with the problem of teaching other men they did not know how to set about their task. Eventually this system was abandoned and the battalion training cadre was utilised to train classes of specialist instructors. No class now deals with more than one subject and, as far as their abilities allow, students are taught to be good instructors in that particular subject. Before going further it may be as well to explain the constitution of the battalion training cadre. This is the Adjutant's particular charge and it comprises a staff consisting of a selected Indian Officer, and an instructor for each class, who has recently qualified in his particular subject at one of the Army Schools. Needless to say, these instructors are the best men available and while employed with classes they are struck off all duties.

The students trained by the battalion training cadre are platoon commanders, senior N.-C. Os. and N.-C. Os. whom it is proposed to send to Army Schools in the near future. As far as possible each platoon is provided with one or more instructors in such fundamental subjects as musketry, Lewis gun and physical training. The companies form their own training cadres which consist of the company havildar-major and such instructors as may be required to assist him. The students, in this case, are drawn from the junior N.-C. Os. and promising sepoys and, as a rule, N.-C. Os. are put through a course with this cadre before they go to the battalion training cadre.

The battalion training cadre is almost always in being. The company cadre comes into operation as required. Classes last from two to three months and do about four hours work daily. Each class consists of about eight students. Indian Officers and N.-C. Os. work in mixed classes, as it is found that, under these conditions, they do better work than when they are kept separate.

The results obtained by this system are most satisfactory and the keenness with which the men set about their work is a real pleasure to witness.

With a view to testing and consolidating the results obtained by this system of instruction a section competition was instituted with prizes substantial enough to galvanize even the slackers into a show of energy. The competition consisted of six items :—

- (1) Turn-out.
- (2) Physical training.
- (3) Arms Drill.
- (4) Squad Drill.
- (5) Message carrying.
- (6) Fire and movement.

In addition a section was penalised five points for each third class shot and two points for each second class shot. In items (1) and (5) the men were marked individually while in the remaining items sections were marked as a whole. Items (1), (3) and (4) explain themselves. (2) was a test of the men's proficiency in both the ordinary P. T. exercises, and in those quaint games which the P. T. experts have designed to promote quickness of thought and action, and as an antidote to monotony. (5) was a test of smartness and concentration. Each man was required to memorise and deliver a short verbal message, acting as an orderly. The message contained mention of time and place, and the number of mistakes made in these details, proved that the test was a good one. In (6) the section was required to act as an advanced section of a forward platoon in an attack on an enemy position. The advance took place over rough ground and was a test of ability to use ground, of fire discipline and control, of tactics and general team work.

The competition formed a fitting climax to the year's training. It brought out strong points and emphasized weak ones and it had a very special value in bringing into the limelight the merits and demerits of the junior N.-C. Os. The system of marking which was adopted made it possible to classify platoons as well as sections, in order of merit, and thereby stimulate the platoon spirit. The keenness of the sections to do well was a very pleasing feature, and for many weeks and indeed, months before the final test, there were few if any sections that did not turn out to practise in their spare time.

As a further stimulus to efficiency a system of grading has been introduced. Under this sepoy is classed in three grades according to efficiency, and N.-C. Os. in two. First grade sepoy is a man of more than average merit who is likely to make good N.-C. Os., or is so classed for some special reason. Second grade sepoy is a man of normal merit. The third grade is reserved for inefficient men. No man is considered fit for appointment as lance-naik or can be employed outside his company unless he has been classed as first grade, and there are other privileges attaching to this grade such as exemption from certain parades. Second grade men lead a normal life, but the life of the third grade sepoy, like the policeman's, "is not a happy one." He is a member of the awkward squad and sees much of the parade ground in that capacity, he is always available for fatigues, and leave for him is difficult to come by. At the same time if he is a real trier, he is given promotion in grade at the earliest opportunity.

Musketry results are taken into account in classifying men, and a first grade sepoy must be as a rule either a marksman or a first class shot. A third class shot becomes automatically a third grade sepoy.

N.-C. Os. are in two grades, first and second. All commence in the latter and are promoted to the former as soon as they have proved themselves worthy. Unless they are in the first grade they are not qualified for higher rank. In the case of both N.-C. Os. and sepoy, inefficiency and misconduct entail reduction in grade. N.-C. Os. are graded by the Commanding Officer on the recommendation of the Company Commanders and the latter are responsible for the grading of sepoy.

The system has several advantages. It provides the N.-C. O. and sepoy with an incentive to effort and they know exactly where they stand and are made to realise the importance to themselves of qualifying as first grade. It follows that Company Commanders have to study their men well in order to be able to grade them and, consequently the danger of an unsuitable man reaching the commissioned or non-commissioned ranks is diminished. The system brings good men to the front early in their careers and it has the merit of being easy to work and easy to understand. It places the Company Commander in a strong position as it makes him the arbiter of his men's careers and, in the interests of discipline, the Commanding Officer

fetters him as little as possible in this matter. It is, of course, essential to the system that Company Commanders keep records of their men which they hand over to their successors.

The army Schools at Wellington and Belgaum have done a great deal of late years to stimulate educational training, and the officers and N.-C. Os., trained at those schools, have infused a new spirit and understanding into what was in former days an almost neglected branch of training. The main business of the Regimental School is to provide every platoon with good educational instructors. Suitable N.-C. Os. and sepoys are selected and put through a school course lasting about three months. The subjects taught include simple arithmetic, report writing, map reading, first-aid, and hygiene, and students are taught the latest methods of instructing uneducated men in the arts of reading and writing. They also have constant practise in lecturing among themselves and the confidence thus acquired is of great value. I have listened to lectures on such comparatively abstruse subjects as hygiene and the blood system, delivered by sepoys, which for clearness, simplicity and interest, could scarcely have been bettered. The schoolmaster is directly responsible for training this class and he has assistants trained like himself, at Belgaum, who teach classes of men working for their 1st and 2nd class examinations, or studying special subjects. The schoolmaster also holds a daily class which all Indian Officers attend, the object of which is to advance their standard of education. The Platoon Commanders are the frame-work of a battalion in these days and their education must needs be as good as possible. Arrangements are also made for educating male regimental children and it is hoped some day, if innate prejudice can be overcome, to bring the smaller members of the other sex within the scope of this scheme.

Platoon education deals with the elementary subjects of reading writing and arithmetic and also includes in its curriculum, geography, citizenship, simple hygiene and first-aid. Its special function is to bring men up to the 3rd class standard, after which the Regimental School will provide for their further needs. The various examinations are held according to regulations by the 2nd-in-Command but there is no doubt in my mind that it would be better to delegate the holding of 3rd class examinations to Company Commanders who would thus be more directly interested in the education of their men.

In the Indian Army education is in its infancy. The regimental school and office are run by men whose first love is the pen rather than the sword. But, with the growth of education, this type will give place to the more genuine fighting man, and fighting units, as such, will, at last, be self-contained.

An interesting feature of present day battalion training is the tactical exercise without troops, popularly known as T. E. W. T. This exercise is apt to be a somewhat fearsome business even for the British Officer but for the Platoon Commander it is a positive nightmare. Nevertheless it is a type of music he must learn to face, and a beginning has been made in my battalion by putting the Indian Officers through a course of T. E. W. T. with the Battalion Training Cadre, since when they have been let loose to work their wicked wills on their N.-C. Os. The initial results are indifferent, with occasional exceptions and the supervision of a British Officer is necessary to prevent the proceedings degenerating into a farce. One can hardly expect imaginations which have lain fallow for countless generations, to function by word of command. At the best progress must be slow but at any rate it is satisfactory to have started the wheels of the mental machine in the lowest gear.

An interesting feature in the training of the Battalion is the study group system which has been introduced to the Indian Army by the Army School at Wellington. Under this system a problem is set to a small group or groups to study, a solution being required after a suitable interval. The section is an appropriate unit for this purpose and the problems set must of necessity be simple. For instance, in my battalion the sections were called on to answer the question "What is the use of education?" The sections are supposed to discuss the problem among themselves and to evolve an answer as the result of mental co-operation. In the result it frequently happens that a masterful section commander ignores all points of view but his own. This is a weakness inherent in the system but on the whole it produces quite a lot of useful discussion and interchange of ideas, and will do good service in the mental evolution of the Indian soldier.

The lines on which the training of the British Officers may run, depend, as a rule, on the views of the Brigade Commander. In order to ensure progress on ordered lines programmes for reading, schemes, lectures and tactical exercises are laid down

and the Commanding Officer is free to sharpen his imagination on other matters. A variety of lectures has been introduced in the Battalion which may be of interest to others. The senior officer present opens the proceedings by giving out a subject and nominating an officer to lecture. The officer is allowed five minutes to think out his points and ten minutes in which to lecture. The other officers are then called upon to criticise and finally the senior officer sums up. The original lecturer next gives out a subject and also has the right to nominate an officer to lecture. The proceedings follow the same lines as for the first lecture and, in conclusion, the nominator of the second lecture has the duty of summing up. This type of lecture calls for concise and quick thinking, it helps to develop confidence in speaking before others and, besides being instructive, it provides plenty of amusement. Also, as any officer may have to sum up a lecture on a subject of his own choosing, it follows that every officer must prepare a subject before coming to the conference. So this plan is, on the whole, productive of a good deal of useful work.

It only remains now to describe the social and recreational side of the Battalion. Games are run by a special British Officer who makes it his business to see that every company and platoon has its right share in such pastimes as are available. He arranges programmes of matches, procures the co-operation of his brother officers, and is responsible for the care of all games kit. Inter-platoon matches are especially favoured and are most valuable in fostering the platoon spirit, and further, it is to them that the Games Officer must look in his search for budding talent.

The social activities of the Battalion find expression in the recreation rooms maintained for both N.C.Os. and men. The latter, in all innocence, call their's the "Y. M. C. A." This is a popular institution and large numbers of men while away the evenings there with music, games and conversation. The N.C.O's. room is on the same lines and has helped to raise the status of the non-commissioned officers and, better still, to sap the roots of "bhai bandi" or cliquism. An Indian Officers' Club is also a flourishing institution and was started on the initiative of the Indian Officers themselves.

The recreation rooms described above are most valuable in promoting a friendly feeling between the various classes of the Battalion. Prejudices are dissolved by these evening

gatherings, and intimacies formed, which can scarcely fail to re-act for good.

Finally, there is the Regimental Society which has a membership embracing all past and present members of the Battalion. The special object of the Society is to maintain touch with ex-soldiers and to help them and their families when times go hard with them. Touch is kept mainly by means of a news-sheet which is published from time to time and contains regimental news of interest, and this is sent out gratis through various distributing centres. It is also hoped to arrange for re-unions of pensioners from time to time as funds admit. The Society is a young one but promises to do much permanent good in promoting loyalty and esprit-de-corps.

The above is an attempt to describe life in an Indian Battalion at the present day. The system, of which a description has been given, is intended to promote efficiency and general well-being and happiness, and to give all ranks a broader outlook on life. Its reaction on discipline has been remarkable and the appearance of a prisoner in the Regimental Office is becoming a rarity. The methods by which the various problems of the system have been tackled are by no means final and will, in the fullness of time, give place to better. "*Sic itur ad astra.*"

THE VALUE OF A STUDY OF CAMPAIGNS PRIOR TO THE GREAT WAR.

By Captain R. G. Williams.

Before the Great War it was the opinion of certain people that the study of military history as an essential aid to the improvement of one's military knowledge and capacity was neither beneficial nor necessary. This idea apparently exists to-day in certain quarters and many articles have appeared on the subject in the various service journals. Some writers, although they do not advocate a complete neglect of military history, urge that it is only from a study of the events of the last war, *i.e.*, the Great War, that we may expect to derive any useful lessons for the future. Others go even further and insist that the study of past campaigns is, from a practical point of view, a waste of time, and that if we wish fully to prepare ourselves for the next war, we must ignore the teachings of all past military history and look only to the future, more especially in the world of science and invention, so that we can discover and utilize everything that can be turned to military purposes. The following is a quotation from a recent article in the *Army Quarterly* on the subject :—

“ It seems that as a result of our concentrated study of the past we loose something of that widened eager habit of ever looking towards the future with which alone we as soldiers are concerned.”

In spite of these opinions, however, the latest edition of *Training and Manceuvre Regulations* lays down the following in regard to the individual training of officers :—

“ Military History must unquestionably have the most important place in study as being the best means of learning the true meaning of the principles of war and their application, and of studying the preponderating part which human nature plays in all operations.”

This paragraph is neither ambiguous nor indefinite.

With regard to the first type of critic, he admits that the study of military history is, to a certain extent, necessary, but he proposes to confine it to the only war of recent years of which no complete authentic account exists. A full and true official

history of the Great War will probably not appear during this generation. It may be mentioned that the French Official History of the 1870 war did not commence to appear till about 1910. forty years afterwards. This type of critic also proposes to restrict his study a war which was carried on, in the main theatre at least, under exceptional conditions, exceptional because for a considerable period the opposing forces, having in the strict sense of the word no exposed flanks, were comparatively immobile and manœuvre was, in consequence, almost non-existent. So far as the British Army is concerned it is fairly safe to say that such conditions are hardly likely to recur in the next war in which it is engaged. It must not be forgotten that the British Army has to be prepared and trained to fight in almost any part of the world, against every conceivable type of antagonist and in every conceivable nature of country. In fact, no army of any other nation is likely to be called upon to fight under such varying conditions as the British.

The idea that a study of the Great War, for the reason that it is the most recent war, must necessarily be of greater benefit to the military student than a study of earlier campaigns, is obviously unsound. If science and invention progress to the same extent in the next decade as they have in the last, then it is fairly safe to conclude that the next war will be as different, in its actual conduct, from the Great War as the Great War was from the one before it. So far as minor tactics of future wars are concerned, therefore, the Great War is unlikely to furnish us with much useful information. So far as strategy and grand tactics are concerned its study, even with the data at present available, must be of certain benefit. The risk of making incorrect deductions will not, however, be completely avoided until full official records are accessible and the war as a whole can be viewed in its proper perspective. Apart from any other reason this lack of complete information seems to make the study of the Great War, by itself, an unsound basis for the purpose of learning the true meaning of the principles of war and their application.

In the past it has sometimes been the popular belief that the successes achieved in war by great commanders have been due solely to the brilliant inspirations of their genius. It cannot be denied that the great commanders of history have been men of unusual ability, but an enquiry into the lives of those men at once discloses the fact that their successes were due, not to

heaven-born military genius, but to a conscientious study of the experiences in war of the great captains who preceded them. That Wellington, Lee, Jackson and Von Moltke all made a life-long study of the war experiences of their predecessors is now common knowledge. Napoleon, too, is well known to have been an earnest student of the campaigns of the earlier commanders. His famous dictum "Read and re-read the campaigns of the great captains" is a clear indication of his opinion regarding the value of the study of military history. Moreover, when it is remembered that Napoleon was alluding to campaigns, not most of them even those of days as near to his as his are to ours, the campaigns of Hannibal and Cæsar, Gustavus Adolphus and Turenne, it is not difficult to come to the conclusion that he was not thinking of minor tactics when he gave this advice. It was as Colonel Henderson reminds us, the 'art of command' that he had in mind, strategy and grand tactics, or, in other words, the application of the principles of war.

Colonel Henderson in his work on Stonewall Jackson* says "Strategy is an art which none may master by the light of nature but to which a man must serve a long apprenticeship." Some men grasp principles with greater facility than others. We cannot all be alike in this respect. Most men, however, can learn the main principles of strategy in a comparatively short time. But obviously this will be of little use unless they also possess the knowledge of how and when to apply them. There is nothing more clearly brought out in Henderson's Stonewall Jackson than the futility of even an able man, such as Abraham Lincoln undoubtedly was, attempting to apply the hastily acquired principles of strategy in opposition to men like Lee and Jackson who had made a life-long study of war.

It is obvious that a knowledge of the tactical details of those campaigns to which Napoleon referred would have been of little use to him. Similarly a knowledge of the minor tactics of the Battle of Waterloo could be of little use to us to-day as part of our military education. In the nature of things minor tactics must continually change in sympathy with the development of armament and scientific aids. The principles of strategy and grand tactics, however, remain the same. The physical limitations of man and horse are very little changed, nor has the necessity of providing them with food diminished. Railways,

aircraft, wireless, tanks have changed the details of the methods of application but nothing more. In this connection the following extract from an article on Tactics in the *Encyclopædia Britannica** is interesting:—

“How curious to reflect that a little more than a hundred years later the descendants of those who stood at Waterloo should have fought out another campaign on a vastly greater scale but on very similar lines and on ground not very far distant. The combatants were differently grouped it is true but the German blow in March 1918, was directed at the junction of the Allied armies, this time the British and French, just as in 1815 the French blow was struck at the junction between Wellington and Blücher. Once again the British Army was based on Northern ports, while her ally was based on inland territory, once more the allies were for a time in danger of retiring along divergent lines and perhaps of defeat in detail. Numbers and weapons were different from those of 1815 but the main features of the campaign and the principles on which it was fought out were the same. So true it is that the principles of war are eternal.....”

Even, however, if this be admitted then before embarking upon a study of military history,—and it is a very laborious process,—it is necessary to decide whether it is the best means of learning the true meaning of the principles of strategy and grand tactics and their application.

What other means are there ? There seems to be only one and that is actual experience. The inevitable corollary of this is that the man who has seen the most fighting must be the greatest authority on war. It must be remembered, however, that mere participation in a campaign without study and reflection can be of little use. In this connection one may recall the story of Frederick the Great and the aged general who urged the acceptance of his opinion on the grounds that he had seen more campaigns than anyone else, whereupon Frederick the Great replied that he had a mule which had been through twenty campaigns but “it was still a mule.” The experience of any individual, however wide, is restricted to certain phases and

localities and can at most only comprise a very small percentage of the episodes and conditions of a war. Moreover, since a state of war is the exception and not the rule it would certainly be doubtful wisdom if an officer decided to rely solely on his personal experiences in war, and what he learnt from them, as the chief means of making himself into a practical soldier fully equipped and qualified to undertake the responsibilities of high command. Practical experience intelligently applied is undoubtedly an enormous asset, but it is not enough. Napoleon probably conducted more important campaigns than any commander either before his time or since, yet in spite of this he still found it necessary to study the methods of his predecessors in war.

If then, as appears to be the case, the knowledge and experience gained by actual participation in war is unlikely to be sufficient to ensure that its principles are applied correctly and intuitively then this deficiency must be made up by tapping the only other source of military knowledge, *i.e.*, by a study of past campaigns. It is a significant fact that of the great names which will be handed down to posterity in connection with the 1918 campaign in France two at least are those of men who had seen little or nothing of war prior to 1914. For 40 years Foch had had no experience of anything but peace soldiering: Ludendorff, for the first time in his life, heard enemy rifle fire on the 4th August 1914. Both had mastered every detail of their art not by the aid of actual experience of war, but by study and reflection upon the methods of their predecessors in war.

The question now arises "How should military history be studied so that it may be of the greatest benefit." It is obvious that more than a mere mechanical process of reading is required. However carefully and methodically such reading is carried out the only result will probably be a more or less accurate knowledge of the tactical details of the campaign. To be able to quote the exact position of any unit at any given moment in a battle may be a commendable attribute in an officer, but at the same time of little practical value to him. Since the knowledge he has acquired is retained by an effort of memory it can have no reality to him, and consequently he would not make use of it intuitively should an occasion arise.

If military history is to be studied properly so that the greatest practical value may be obtained, a thorough knowledge of the strategical and tactical principles as set out in F. S. R. II is a first essential. Next, a suit

able campaign having been chosen, the situation at its commencement must be carefully appreciated from the point of view of both sides. Political considerations must not be omitted as it will often be found that purely military factors are dominated by political exigencies. This appreciation must then be compared with the actual action taken by the opposing forces. A diligent search must be made for the 'why' and 'wherefore' of every move made on both sides, it being remembered that commanders in war do not usually move at random or haphazard. There is always some reason which, when considered in the light of the information then available, would appear to be sound. A thorough study of a few suitable campaigns must of necessity involve a considerable amount of labour, but it is certain that it will be of more practical value to the student than the superficial acquaintance with twenty campaigns which is obtained by mere reading.

In connection with the choice of a campaign for study I give another extract from the article on Tactics in the Encyclopædia Britannica * :—

"When due allowance is made for invention surely no campaign is better worth studying than this of 1815. Fought out between two great captains within the space of a few days and over a few miles of country it forms a very epitome of war in all its branches. The doubt up to the last moment of Napoleon's intentions; the strategical surprise; a concentrated force with one line of communication operating between two forces with divergent lines; the handling of D'Erlon's force and the attempt to effect a concentration on the battlefield of Ligny; the British and Belgian rearguard action at Quatre Bras and the retreat to Waterloo; Wellington's masterly disposition of troops as contrasted with Blücher's two days earlier; his telling use of advanced posts La Hougement and La Haye Sainte; the breaking up of Napoleon's massed attack; the concentration of forces on the field of battle and the great counter-stroke against Napoleon's right and rear and finally the stupendous defeat, the inevitable result of this most difficult manœuvre when successfully accomplished. They were indeed crowded days of glory."

The regimental officer might quite naturally ask the question "If a study of military history is only likely to be of use

to me from the point of view of strategy and grand tactics, how is it going to help me in my career as a regimental officer in war. It may do me good eventually when I attain high command, but as a company commander or even as a battalion commander of what benefit can it be to me ! ”

The answer to this question is fairly obvious.

A commander makes his plans and brings the units of his army into certain positions at the commencement of the battle. Once battle is joined the issue must to a great extent lie with the subordinate commanders. Human nature has its full play, and no commander, however eminent, can always foresee how local incidents may influence the course of a battle. But, if the success of the operation is not to be jeopardised, these local incidents, whatever they may be, must be dealt with quickly and promptly and on sound principles by some one in the immediate locality who can appreciate their bearing upon the course of the operation. This some one in the immediate locality will probably be a very junior commander.

Modern war calls more and more for an intelligent use of initiative by subordinate commanders, and it is fairly safe to say that the subordinate who grasps the broad situation most clearly will solve the local situation most intelligently. In this connection F. S. R. II * remarks that “the efficiency of the leaders of the smallest units will often be the measure of an army’s success.”

There are, however, other lessons to be derived from a study of campaigns prior to the Great War. We can learn, for instance, in the words of Training and Manœuvre Regulations “the preponderating part which human nature plays in all operations.” Napoleon said that he found in the study of great campaigns “a complete study of human nature under the conditions which exist in war: human nature affected by discipline, by fear, by need of food, by weight of responsibility and by patriotism.”

In regard to the unchangeability of human nature a recent writer in the *Army Quarterly*† asks the question “How can one say that the history of past wars teaches the immutable law of behaviour ?” He proceeds :

“Human nature has changed throughout the ages in exact measure with the changes of human environment and ways of life. What of our pre-war ideas regarding

* 1924, I (2).

† The Practical Value of Military History, October 1924.

the kindly homely German, the fickle scatter-brained Frenchman, the laborious patient Russian ! These merely died many years ago and we were too pre-occupied or too short-sighted to notice it."

The writer of this article who will have nothing to do with military history has obviously practised what he preaches. The kindly and homely German certainly did not exhibit those admirable qualities in the wars of 1866 and 1870. Bismarck, with the widest stretch of imagination, could not be described as being of a kindly disposition. Even a cursory study of the 1866 and 1870 campaigns would have given the author of this article a very definite idea of what type of antagonist we should meet in the event of hostilities with Germany, *i.e.*, the kindly homely German affected by discipline and patriotism.

Similarly with the Frenchman. Even admitting the former idea of his fickle and scatter-brained nature, this is quite beside the point. The soldier wants to know what type of man he is when affected by the various conditions which exist in war, and this military history alone can tell and does tell us. After all it is the duty of the statesman, not the soldier, to know what sort of man he is when affected by the conditions which exist in peace, especially a peace immediately following a war. Most statesmen probably do read history and reflect upon it. The rapidity and determination, however, with which France the vanquished, paid its indemnity to Germany after the 1870 war should have given them an indication of the probable attitude of France towards the question of reparations, and their payment by Germany, when their respective rôles were reversed.

The laborious and patient Russian may have existed and probably still does exist as an individual. The Great War then at least has taught us for our future guidance the possible effect of intrigue, lack of discipline, lack of food, etc., on a "laborious and patient" nation governed by a particular political system.

If military history be studied, all that Napoleon found on the subject of human nature will probably be discovered. If one believes in the "immutable law of behaviour" then the knowledge thus gained, provided it is applied correctly, cannot fail to be of very great use to a commander in war, as it was to Napoleon.

The value of a study of campaigns prior to the Great War does not end here. Many lessons can be derived in regard to the Duties of Command and Staff Duties. I will deal briefly with these two headings in turn.

Duties of Command.—Training for Command can probably be divided into three headings :—

- (a) Practical training with troops.
- (b) Theoretical training without troops.
- (c) Character training.

Military history can undoubtedly help in regard to (b) and (c).

Training and Manceuvre Regulations indicates how it can be of use in regard to (b) so that it is unnecessary to enlarge upon it. It may be mentioned in passing, however, that these Regulations* emphasise the point, in regard to the arrangement of tactical exercises without troops that a historical basis makes for a realistic scheme.

With regard to character training. By careful reading of past campaigns and a little reflection the reasons why commanders failed can generally be discovered. Invariably these reasons are want of determination, lack of character, irresolution, perhaps ability to formulate a plan but complete inability to adhere to that plan.

Take the 1866 Campaign in Bohemia for instance :

Benedek, the Austrian commander, inactive, irresolute, waiting without a plan for the Prussians to envelop him. Result : Koniggratz.

Now take his opponent Von Moltke with a strong mentality, a thorough appreciation of the value of delegation of authority, determination, and having made a plan a strict adherence to it.

Again with regard to the Russo-Japanese War of 1904 :

Take the Russian General Kuropatkin.

A soldier of great experience, highly educated and in the prime of life. What were his chief characteristics as disclosed by the events of the war ? They were again that fatal lack of determination, ability to make a plan but complete inability to stick to that plan. Resolution and determination were the outstanding characteristics of his opponent Oyama, and these were undoubtedly reflected in the conduct of his subordinate commanders and men.

*Para. 13.

These two examples suffice to show that it is not necessary to read very deeply into military history to discover the disasters which, in the past, have inevitably befallen the man who, having attained high command in peace, has been found in war to lack those characteristics which are essential in a commander if he is to achieve success. If by a study of past campaigns and reflection thereon a commander can discover this then it must be admitted that it forms a most valuable means of character training. It may be mentioned that F. S. R. II, 1924* devotes a whole chapter to a discussion of the characteristics of a commander and the principles of command.

In regard to staff duties. The campaigns prior to the Great War certainly contain some lessons in regard to that most important part of a staff officer's duties, *viz.*, the writing of operation orders.

All will admit that the importance of clearness of expression, absence of ambiguity, of careful consideration regarding the amount of information given and the amount withheld, the importance of all these is being continually emphasised. F. S. R. I † gives one of the reasons for this in the words "All orders must be so clear that the recipient can grasp their intention with the minimum of trouble and delay." There is, however, a further reason and that is because an operation order affects, either directly or indirectly, everybody in the force down to the most subordinate commanders.

I will quote another example from the Russo-Japanese War—the battle of Telissu. The Russians (20,000) under Stakelburg met the Japanese (30,000) under Oku at this place on the 15th June 1904. The comment on this action in the official history of the Russo-Japanese War ‡ is as follows:—

"The operation orders issued by General Stakelburg, for the 15th June, were not embodied in one general order but took the form of separate memoranda indifferently worded. Units were in ignorance of the general situation with the result that there was lack of cohesion and confusion ensued."

On the subject of operation orders the following extract from the official history of the South African War § in regard to the Battle of Paardeburg is of interest. It says —

* Chapter II.
† Para. 82 (1).

‡ Vol. I, p. 187.
§ Vol. II, p. 143.

"On no other battle during the war did the lack of clearly expressed operation orders exercise a more marked influence. Few of the subordinate leaders appear to have been aware that Lord Kitchener had formulated a plan of action and the verbal instructions delivered to them, or to those under them, failed to convey explicitly his intentions."

So much for operation orders.

I now propose to quote one or two examples from the Great War itself with the intention of showing the effect of the use and non-use of military history by different commanders.

The first example deals with the position of the British Expeditionary Force in France on the 24th August 1914, and the following extract from Lord French's book,* "1914," speaks for itself:—

"The fortress of Maubeuge lay close on my right rear. It was well fortified and provisioned. It is impossible for anyone, who has not been situated as I was, to realise the terrible temptation which such a place offers to an army seeking shelter against overwhelming odds. For a short time on this fateful afternoon I debated within myself whether or not I should yield to this temptation, but I did not hesitate long, because there were two considerations which forced themselves prominently on my mind. In the first place I had an instinctive feeling that this was exactly what the enemy were trying to make me do and in the second place I had the example of Bazaine and Metz in 1870 present to my mind and the words of Hamley's able comment on the decision of the French Marshal came upon me with overwhelming force. Hamley described it as 'the anxiety of the temporising mind which prefers postponement of a crisis to vigorous enterprise.' Of Bazaine he says, 'In clinging to Metz he acted like one who, when the ship is foundering, should lay hold of the anchor.'

I, therefore, abandoned all such ideas and issued orders at about 3 P.M. directing the retreat some miles further back to the line Le Cateau-Cambrai."

I will now refer to the campaign in Mesopotamia and the effect of the non-use of military history.

* P. 70-71.

At the end of November 1915, after the battle of Ctesiphon, General Townshend retired towards Kut. On December 1st he reported to General Nixon that he had been attacked at Umm al Tabal by 12,000 of the enemy and that he intended to retire to Kut and to defend it as he had defended Chitral.* He added that the state of extreme exhaustion of the troops demanded instant rest. From this message it may be inferred that the fatigue of the troops was the decisive factor governing General Townshend's decision to halt and stand at bay at Kut. The official history † of the Mesopotamian Campaign records, however, in the following words its disagreement with this inference. It says—

“It should be noted that General Delamain's opinion as to the physical condition of the men of his own brigade on their arrival at Kut makes it clear that the exhaustion of the men was not a contributory factor to the occupation of Kut. ‘There is no doubt, says General Delamain, ‘that the men British and Indian, of the 16th Infantry Brigade were quite fit to continue the retirement after one day's halt at Kut’ and he is of the opinion that the men of the other brigades ‘were probably just as fit’.”

It may further be mentioned that Kut was not fully invested by the Turks till the 10th December, some seven days after General Townshend's force arrived there. But whatever reasons General Townshend may have had for his decision the fact remains that he followed a course which in his own words ‡ “all history was at hand to show was likely to lead to disaster.”

After the battle of Ctesiphon General Townshend's force ceased to be a striking force and became a detachment. If he had made use of the knowledge he undoubtedly possessed regarding the rôles and duties of detachments, and of the lessons that could be derived from a study of Stonewall Jackson's Valley Campaign for instance, he would have realised that he must at all costs retain his power of manœuvre, *i.e.*, he must observe the principle of mobility. Realising this it is fairly certain that he would not have taken a decision which not only changed the course of the whole campaign but which also involved, in the attempts which inevitably had to be made to relieve Kut, some 25,000 casualties, or a larger number of men than that

* My campaign in Mesopotamia, p. 197, *et seq.*

† Vol. II, p. 60.

‡ My campaign in Mesopotamia, p. 209—211.

with which General Aylmer had advanced in 1916. The occupation of Kut adds yet another example to history of the inability of a commander, in face of an enemy superior in numbers, to resist the temptation of seeking the shelter of a fortress for his troops. In the hope of ultimate relief.

I will quote one more example from the Great War, but this concerns organisation rather than strategy. In the American Civil War 1861—65 the Federals, for a considerable period adopted the system of varying terms of enlistment. Some men signed on for three months, some for six months and so on. The war continued for four years so that the obvious result of this system can be imagined.

Failing to profit by the lessons of that campaign we adopted the same system during the greater part of the South African War which lasted for three years. It was not till towards the end that enlistments were made for duration.

The South African War, however, impressed the importance of the lesson on our minds and throughout the Great War all New Army enlistments were made for "duration."

With regard to the future. It is not for one moment suggested that a profound knowledge of past campaigns is all that is necessary to produce the thoroughly practical soldier. It is necessary also to think of the future as well as of the past: one is just as essential as the other. It is necessary to realise the vital importance of keeping in close touch with the best and most progressive scientific thought of the day. But, at the same time, it must not be forgotten that however much scientific developments may alter the actual conduct of a campaign, it will always be the object of a commander so to manœuvre his army as to defeat or destroy the enemy's main forces with the least possible loss to his own troops. The most confirmed sceptic will admit this. It is here, however, that an instinctive knowledge of the true meaning of the principles of war and their application becomes necessary. Since the chief means of acquiring this knowledge is by an intelligent and systematic study of past wars it is necessary, therefore, when thinking of the future and reflecting upon the possibilities of the next war, to use this knowledge as a basis for any study and reflection.

The lessons to be derived from a discussion of this subject seem to be as follows:—

1. That a study of campaigns prior to the Great War will be of great value if it is carried out thoroughly and

systematically. It must be remembered, however, that the object of such study is not so that we may acquire a knowledge of the minor tactics of those campaigns but chiefly so that we may gain—

- (a) An instinctive knowledge of the principles of war and their correct application.
 - (b) A knowledge of human nature under the conditions which exist in war.
2. That to avoid all earlier campaigns and to confine one's studies to the Great War alone is unsound.
 3. That actual experience of war, however wide, can be of little use without reflection and study.
 4. That the study of military history by the regimental officer is essential if he is instinctively to do the right thing in war when faced by a situation which requires prompt action.
 5. That to be fully prepared for the next war it is necessary to think of the future and to keep in closest touch with scientific developments. But since the main principles which will apply to future wars are the same as those which have governed past wars, it will be unwise, when thinking of the future, to ignore the teachings of the past in endeavouring to arrive at correct conclusions.

The professional soldier who has achieved a mastery of his profession will tell you that there is no royal road to competence, and that it can only be obtained by hard study and above all by constant reflection and meditation on the data drawn from that study. Some amateur strategists, to prove to the contrary, will remind you that Napoleon was 26 years of age when he conducted his victorious Italian campaign: that Alexander the Great was 25 when he won his last great victory of Arbela: that Cromwell knew nothing of soldiering till the age of 43 and at the age of 50 was Commanding-in-Chief. In ignoring the fact, however, that these men were what might be termed military geniuses the amateur strategist succeeds in proving nothing. It is far safer to assume that one is an average individual and to take heed of the advice of the professional soldier. Since a considerable part of that study to which he refers, and according to

Training and Manœuvre Regulations the most important part concerns Military History, I will bring this article to a termination with the following quotation which seems to me to be very apt :—

‘In the practice of our profession whatever it may be, we are either very presumptuous or very foolish, or both, if we do not endeavour to model ourselves, so far as our respective capacities and limitations permit, upon the examples of the great masters of the art or craft we have elected to follow.’

THE SIMPLIFICATION OF INFANTRY DRILL.

By Colonel G. L. PEPYS, D.S.O.

1. In the Army Quarterly for April 1925 appeared an article by Captain B. H. Liddell Hart, entitled "A Modernized Drill System," with diagrams.

This article contains powerful arguments in favour of simplifying the present system of infantry drill, which, as the writer shows, is but the battle drill of bygone ages. Captain Hart based his plea for the modernization of drill, partly on the wrong teaching for war inculcated by our present drill movements, and partly on the fact that a large proportion of the home forces, the Territorial Army to wit, cannot really spare time for any form of training which is not going to be of direct use for war.

2. Both these reasons for modernizing and simplifying drill, apply as much to the Indian Army as to the Territorials. To spend a large proportion of the Indian soldier's working hours in teaching and practising drill movements which are not only unnecessary, but which also inculcate undesirable habits on the battlefield, and then to expect him to forget all about these movements in the presence of the enemy, is in my opinion a dangerous misdirection of effort.

3. A proposal which has been discussed, *i.e.*, to have a two year training cycle instead of an annual one, affords evidence that in the Indian Army as well as in the Territorials, difficulty is experienced in finding time for all the subjects which have to be taught the infantry soldier.

I have heard it seriously proposed by officers keen on their profession, that the various trained soldiers' musketry courses should in future be fired once in two years instead of every year, owing to the shortage of time available for teaching all the various branches of training. It is hearing this proposal discussed that has prompted me to put pen to paper with the object of directing attention to Captain Liddell Hart's article and showing that there are other ways of making more time available for the essential branches of training, than by curtailing the hours spent on such vitally important items as shooting with the various infantry fire-arms.

4. The other consideration, however, that much of our present close order drill is not only obsolete, but contrary to what we require our soldiers to do on the battlefield, is no less important. Captain Liddell Hart brings out this aspect of the question so lucidly in his article that it seems unnecessary to say any more about it. But I would like to suggest that Captain Liddell Hart does not go far enough in his proposed remedies. He gives alternative methods of drill suitable to take the place of the present close order drill, and he indicates suitable formations for ceremonial, but he omits all reference to reforms in the handling of arms, or to the considerable time expended at present on teaching men to hold their rifles in ways that are not used in war. For example, much time and care has to be expended to teach men to march with arms sloped correctly both with and without bayonets fixed: anywhere near the battlefield arms are not sloped, for very good reasons. The whole time spent in teaching this movement has consequently been wasted as far as preparation for the supreme test of the battlefield is concerned.

I would therefore go further than Captain Liddell Hart proposes in excluding from our drill all movements, including methods of carrying arms, which bear no relation to what is required for war.

5. For the benefit of those who may not have the original article to refer to, I summarize below my proposals for the simplification of drill, based on those of Captain Liddell Hart:—

- (a) File to be the normal formation of the infantry section, until such time as it has to open out into arrow head or skirmishing line. This file formation to be known as section column. (Fig. 1.) For purposes of inspection only the section could be turned to the right or left, but would resume its column formation on the inspection being completed.

To form single file in the field the left hand men would get in rear of their right hand neighbours alongside them.

- (b) The normal close order formation of the platoon acting alone to be close square, *i.e.*, with the four sections, each in section column, in square formation at 7 paces interval and distance, numbers 1 and 3 sections on the right and 2 and 4 on the left. (Fig. 3.)

From this formation the platoon could deploy to square at full deploying intervals and distances as in our existing battle drill, or it could close into column of fours, to be known as platoon column, with 1 and 2 sections abreast (each in file) and 3 and 4 sections following (also each in file). (Fig. 2.)

- (c) The normal close order formation of the company to be "close square," i.e., with the four platoons, each in platoon columns, in a square formation at 7 paces interval and distance, numbers 1 and 3 platoons on the right and 2 and 4 on the left. (Fig. 4.)

The company would then be ready to deploy into square formation at full deploying intervals and distances, or to march off in fours, number 2 platoon following number 1 and number 4 following number 3. The company would then be in company column.

- (d) The normal close order formation of the battalion would also be in close square, i.e., with the four companies, each in company column, in a square formation at 17 paces interval and 7 paces distance, with the headquarter wing in rear, also at 7 paces distance. This formation to be known as "square of companies." (Fig. 5.)

A variation of this formation would be "square of platoons" in which each company would open from company column to close square, and give the battalion in a square of four companies each in close square, with platoon at 7 paces interval and distance. (Fig. 6.)

To march off in fours from square of companies the battalion would form battalion column by number 1 company being followed by number 2 and so on.

The same movement could be done from square of platoons, by each platoon following into its proper place after number 1 platoon.

The above few formations and the necessary movements from one to the other would constitute practically the whole of the close order drill essential to the infantry soldier. Before leaving this subject, I would like to join issue with Captain Liddell Hart over his proposal that numbers 2 and 4 sections or platoons should be on the right and 1 and 3 to the left : this seems

an unnecessary variation from the ordinary way of numbering from the right and a break with the tradition of many years according to which 1 and 3 always have been on the right and 2 and 4 on the left. The same unnecessary variation from traditional usage occurs in our present battle drill, *vide* Infantry Training, Chapter VIII, section 123. This, however, is by the way and not of first rate importance.

6. It now remains to consider the methods of carrying the rifle, a subject not dealt with by Captain Liddell Hart. The slope arms is really obsolete for battlefield purposes, therefore it should cease to be the normal method of carrying the rifle at drill. The trail arms is the recognized way of carrying the rifle once the men have got into skirmishing order, *i.e.*, it is a battlefield method, therefore let it be the normal method also for drill purposes.

The "shoulder arms" is a convenient movement for saluting, for N.-C. O.'s while drilling a section or squad, and for short movements in file. Let it therefore be retained.

For marching at ease, or moving with loaded arms, the rifle slung perpendicularly on either shoulder, muzzle uppermost, is the accepted method and should be retained.

There remains only the "present arms" for purely ceremonial and guard purposes. This should be done from the order, as in Rifle Regiments.

The above few rifle motions with the "port arms" for inspection and bayonet work would constitute the whole of arms drill and would take less time to teach and to practise than the existing drill, which comprises the difficult slope with fixed bayonets.

7. With Captain Liddell Hart's suggestions for ceremonial I do not entirely agree in all details and I give below the following few formations and movements which would seem quite sufficient for the needs of the Indian Army:—

For inspection—the battalion should be marched on to the parade ground in square of companies and inspected in that formation. It does not seem necessary for the inspecting officer to be able to look at each man in the battalion individually, but if he should wish to do so, each company in succession could open out into platoon close squares and be inspected in that formation by platoons.

For the March Past—the battalion could adopt the “square of platoons” formation in which two companies would move on the same alignment, each in close square, followed by the next two companies.

For the advance in review order—the square of companies or square of platoons would be equally suitable.

For the presentation of Colours—the square of companies would be most suitable.

For the above ceremonial drill all sizing and equalizing would be unsuitable and would be abolished. The *feu de joie* is an obsolete practice, which has moreover lost most of its spectacular effect with the introduction of smokeless powder, and it might well be abolished.

Trooping the Colour is a drill seldom done and it likewise might be done away with for the Indian Army.

For the funeral exercise—it is considered that full respect and reverence could be shown by means of the “present arms” and “shoulder arms” without recourse to the “reverse arms” or “rest on your arms reversed.”

8. The adoption of the proposals outlined in the preceding paragraphs for the simplification of drill would undoubtedly save many hours now spent in perfecting infantry soldiers in drill and movements which are survivals of old battle drill, but which now bear no relation whatever to the needs of the modern battlefield. Not only are such movements obsolete as preparation for war, but they may even, as Captain Liddell Hart suggests in his article, sow the seeds of actual danger by developing habits which cause bloody losses on the battlefield.

The further result of simplifying drill on the above lines would be to postpone indefinitely the proposals now being discussed from time to time amongst officers of the Indian Army for the curtailment of the hours to be spent on essentials, such as weapon training. To me the idea of cutting short the time spent on real preparation for war, while retaining the full programme of time devoted to the present close order drill and ceremonial, seems sheer heresy, and this must be my excuse for dwelling at length on this subject.

THE PHYSICAL AND CLIMATIC DIFFICULTIES OF THE MESOPOTAMIAN THEATRE OF WAR.

A memorandum written during the campaign in Iraq.

By Colonel W. F. Blaker, D.S.O., O.B.E.

“When Allah had made hell he found it was not bad enough. So he made Iraq—and added flies.”

(From the Arabic.)

Iraq is a vast plain of alluvial clay unrelieved by a single range, hill or natural eminence of the slightest importance; it is low-lying throughout, and even Baghdad—560 miles by river from Fao and 340 as the crow flies—is only 112 feet above sea-level. Along the Western border of Iraq the sterile Arabian desert comes close up to the Euphrates which has no right-bank affluents and therefore at no time provides water for either wells or streams that might be an aid to military operations in the desert country. On the Eastern border the plain stretches away to the Persian mountains which follow roughly a line running parallel to, and 15 to 40 miles from, the left bank of the Tigris.

Between the boundaries so defined lies a country difficult to describe in detail, or even in general terms, because it is rarely the same for more than a few weeks together. It is an area of marsh and desert, of river and lake, where a rise of the water-level amounting to only a foot or so will alter the whole face of the land and convert into a huge expanse of open water, or into an impassable morass, what was an arid desert only a few days before. A fall of the water will almost equally quickly lay bare scores of square miles of thick brown mud that only needs time to dry to become capable of supporting most military traffic. But when the water recedes it generally does so wholesale leaving behind not even so much as a solitary pool for troops to draw upon. Where it remains at all it is held in brackish marshes and is probably unfit for human consumption. Nor does rain alleviate matters; in fact it makes them rather worse. The average annual fall is only 6·43 inches, of which not less than 5 inches are as a rule distributed over the period from the beginning of November

to the end of March. The amount in those five months is little enough, but it is the nature of the fall rather than its sparseness that causes the trouble. In Iraq slow, steady rain is almost unknown and rain without a thunderstorm almost unheard of. The storms are frequently of great violence and accompanied by hail and strong gales; occasionally they continue into April, and they were particularly bad during April 1916. They come on with remarkable suddenness and may bring all troop movements to a dead stop in a few minutes, but they do not as a rule last long. The worst storm recorded at Basrah (March 22nd, 1916) only lasted about half an hour; in that time, however, it did a great deal of damage and hailstones the size of walnuts fell. From May to October any rain is quite exceptional and what little there is may be expected to take the form of light spasmodic showers.

The so-called "flood season" has little or nothing to do with the rains but owes its being almost entirely to the melting of the winter snow in the Caucasus and in the highlands of Asia Minor hundreds of miles away. The rivers begin to rise early in January and reach their high level at the end of March. April and May are the principal months for floods which begin to subside early in June and may be considered over by the end of July. The period of lowest water is in the months of September and October. During the high-flood season practically the whole of the country watered by both the Tigris and the Euphrates, from just below Baghdad to the sea, is beneath the flood-level of those rivers. In fact on the Tigris, except for a few isolated mounds and banks, there are only three places a few feet above flood-level, *viz.*:—Shaikh Saad, a point about a mile and a half below Kut-al-Amara, and Ctesiphon: and the two first-named are insignificantly small areas only a few hundred yards square.

The rivers are kept within their banks only by means of marginal dams or "bunds" constructed almost throughout their courses from the headwaters to the Persian Gulf. These "bunds" are composed of loose earth just heaped up at the edge of the river, and they are generally less than six feet broad and only three or four feet high. When one travels up-river during the floods, and observes that the surface of the water on which the steamer floats is a foot or two above the level of the surrounding country, the importance of the bund and its apparent unsuitability for its work strike one with great force. In peace time the bunds

are a source of constant anxiety to the Arabs, for a broken bund, probably not noticed until the river has pierced it, must be repaired at once if miles of land are not to be inundated. In war-time the bunds are of even more vital importance, for whole tracts of country may be rendered untenable by the judicious cutting of one of them; or a flank may be secured or a line of advance barred by the same simple device.

In view of the length of the bunds and of their imperfect construction, it is not surprising that the confinement of the water leaves much to be desired and that there are many large areas of marsh and shallow lake close to the rivers. These areas one would naturally expect to find actually contiguous to the river-banks. But it is a remarkable fact, not yet fully explained, that the chief lakes and marshes instead of being contiguous to the rivers are anything from half a mile to four miles away from them, the land between being dry and not marshy except during prolonged bad weather. These narrow strips or "belts" of land between river and marsh are one of the most noteworthy features of the country, for it is to them that military operations are usually of necessity confined with the consequence that direct frontal attacks over absolutely flat ground without a vestige of cover are frequently unavoidable. This in itself is a great difficulty, but there are other factors which add to the complexity of the problem. Thus the dry belts are intersected by creeks and irrigation canals that hamper free movement and are generally sufficiently broad and deep to necessitate bridging. They are of all shapes and sizes and are so numerous that, seen from an aeroplane in the flood season, they resemble the costal bones of a fish joined to the spinal column. This applies with particular force to the river Hai where no less than 36 watercourses, all more than five yards wide, occur on the right bank between Nasiriyah and Kut. Following the bunds of the river the distance is 136 miles between the two places, so that there is a creek to cross every four miles approximately. On the left bank the situation is even worse for there more than 40 creeks occur besides the Bad'sh river which has a breadth of 60 yards. The length of the creeks is anything up to 20 miles. On the Tigris and Euphrates the creeks and watercourses are almost as numerous as on the Hai; and many of them, like the Wadi, the Dujailah and the Musharrah are so wide and deep as to attain to the proportions of rivers.

Another curious fact is that nearly all the watercourses connected with the rivers are distributaries and not tributaries.

There is scarcely a genuine affluent in the whole country, for even the streams that flow from the Persian mountains loose themselves in the Suwaicha or in the Huwaize which, like the other great marshes, absorb the water drained from the capital rivers through the medium of creeks and irrigation cuts.

The marsh and lake areas lie beyond the dry belts; they may be anything up to 20 miles in width and up to 50 miles or more in length, but their dimensions are an uncertain ever-varying factor. During the flood-season the marshes themselves are quite impassable although dry strips of ground are found in the intervals between some of them. In the low-water season some of the marshes dry up altogether, others shrink considerably and the dry ground between the latter will usually be fit for most kinds of traffic. In some places, however, the drying ground contracts to such an extent that wide cracks occur, rendering movement of cavalry and wheeled transport out of the question. Tracks actually traversing the marshes exist in the dry season, but they are little used even by Arabs and it would be inadvisable to depend on them for military purposes except for small bodies of infantry and cavalry in an emergency: the ground remains soft even in the driest years and any regular traffic would soon land both man and horse knee-deep in mud.

The actual positions of lakes are occasionally greatly affected by the direction and force of the wind. Certain lakes have been observed to extend on one side or to contract on the other for as much as one or two miles when a strong wind from the North has succeeded a strong wind from the South. These changes do not take place gradually either. In one case the edge of a lake approached a camp at a rate of between 12 and 15 yards a minute and necessitated a rapid change of site. Troops may encamp at night on good dry ground with little or no water in sight and yet find at daybreak that a broken bund, a shifting lake, or the effects of the seepage have made it impossible to stir from the camp which may itself be under water. Indeed so great is the risk of unpleasant surprises, and so deep the mud at times, that causeways some miles in length may have to be built. Along them troops, guns and transport move in the direction required; and when they reach their journey's end the camps they occupy, or the trenches they man, must often be surrounded by dams or other earthworks if they wish to be reasonably sure of not being flooded out before the morning.

All these difficulties are at their maximum during the period of high flood when the movement of troops near marsh or river is fraught with considerable risk. Also the flood-period comes at an unfortunate time of the year. If there were no floods in March, April and May these months would be the best for military operations. The weather is then better than at any other time, there is little rain and a reasonable temperature prevails. But these climatic advantages are largely nullified by the floods whose subsidence is followed immediately by the burning heat of June, July and August.

Beyond the marsh and lake areas lie stretches of desert which are, generally speaking, unflooded and passable but waterless. In the East the desert extends from the edge of the marshes to the mountains of Pusht-i-Kuh, but here it is liable in parts to be inundated by the overflow from the Abi Gunjian Chun, and from the mountain-streams when the snows are melting during March and April. West of the Tigris the desert similarly begins at the edge of the marshes some 20 miles from the river and extends until it merges in the marsh-area watered by the Hai and its Eastern—or left bank—distributaries. West of the Hai the process is repeated towards the Euphrates so that, speaking in broad terms, there is always the same sequence of features extending outwards on both sides from the main rivers, viz.—

River A.

Narrow dry belt traversed by creeks.

Marsh and lake area.

Desert.

Marsh and lake area.

Narrow dry belt traversed by creeks.

River B.

This sequence continues from the Pusht-i-Kuh range on the one side to the Eastern edge of the Arabian desert on the other; only in the South does a different picture present itself. Here, from Suk-es-Shuyukh downwards, the Euphrates cannot be said to have a clearly defined bed. The whole area included in the triangle Nasiriyah, Gurmat Ali and a point mid-way between Qurnah and Ezra's Tomb becomes one huge expanse of open water and marsh, with only a solitary half-inundated village here and there and with the Hamar Lake as its principal feature. In the dry weather the marshes recede

but the general marshy character of the triangle remains unchanged. The Northern and Southern sides merge into desert ; its Eastern side is closed by the Tigris and by the dense belts of palm groves that follow that river's course for nearly 120 miles, from Qurnah down to the sea. They are another feature of the country, but a detailed description of them need not be given here ; suffice it to say that fighting in palm groves resembles fighting in woodland aggravated by the presence, every few yards, of ditches deep with bog or water and innumerable low banks and mud walls.

The palm-belt area is always damp, and here it is that the humid heat takes quite as much out of man and beast as the scorching sun up-country. In Basrah the maximum shade temperature in the summer is usually about 115° Fahrenheit and the minimum winter temperature about 32°. Inland the average readings vary at different places up to Baghdad, but the contrasts between maximum and minimum are even greater than near the sea. During the summer of 1918 the heat at Baghdad rose to 123° inside sun-brick houses ; in the camps beyond the city it rose to 134° inside tents. During the winter of 1918-19, 6° of frost were registered on one occasion. It will thus be seen that the climate of Iraq is one of extremes. The hot weather begins in May and ends about the beginning of October, the hottest months being June to September, both inclusive. In November the weather is cool ; and in December, January and February it is decidedly cold, especially up-stream where the temperature not infrequently falls below freezing point. March and April are warm and unsettled with occasional thunder and duststorms.

During the hottest months there is much suffering, and cases of heatstroke are common. In one day in 1915 nine British soldiers died of heatstroke in Basrah. On June 17th, 1916, there were five deaths amongst 17 cases in Basrah, where also on June 26th no less than eight motor-launch drivers out of 11 belonging to the Red Cross went down with heatstroke on the river, the glare from the water being probably to some extent responsible. At the fighting front the heat was terrific, especially in the trenches, but it at least got rid of the flies which always constitute an indescribable form of torture till the heat kills them. Sand-flies and mosquitoes combined are not more trying and probly doab not cause a greater amount of disease.

In most places matters are aggravated by the fact that there is no natural shade of any kind, for trees are scarce in Iraq. Indeed there are practically none but date-palms which give poor shade, and from Qurnah to Baghdad not even these exist outside the palm-gardens at Amarah and Kut. The wood at Kutniyeh (about half way between Azizieh and Ctesiphon) and a few other isolated clumps form the only exceptions. Lack of trees means lack of wood both for building and burning. The fibrous palm is ill-suited for the former purposes, and for the latter it provides only the "karab," that is the thick end of the palm-branch cut off near the stem—at best this is only moderately good fuel. Thus nearly all wood (including firewood) has to be imported from India and elsewhere. The question of arboriculture has been taken in hand and experiments have been made, but there is so much sub-soil water near the surface that most exotic trees get waterlogged and die.

To the lack of wood must be added an almost total absence of stone which has therefore also to be imported. Below Baghdad stone is found only at Samawa and at the Jebel Sinam, an isolated volcanic hill some 30 miles South-West of Basrah. There are consequently no metalled roads in the country beyond those made by Indian Expeditionary Force "D," and all the houses are built of sun-dried brick. These houses are of little benefit to the Army because they are rarely where they are most needed and because the majority of them are most unsuitable as billets. Many of them are wretched hovels, badly ventilated, without water, without proper cooking-ranges and without sanitary arrangements of any kind. Before the British came to Iraq the open street was the public latrine of the lower orders. The best houses consist of a quadrangular shell of rooms built generally in two storeys round a square courtyard which slopes towards a small hole in the centre. The hole is the entrance to the cesspool, and when the sub-soil water rises during the flood-season the courtyard is flooded and may be the lower rooms as well. When the water subsides it disappears through the hole and a foul stench comes up instead. There is nothing to keep the houses cool, no verandahs, only an expanse of country brick that retains the heat during the day and gives it out again when the sun is down. Houses of this nature cannot be used as hospitals and are often unfit for use even as store-rooms. So new houses have to be built, but before the walls are begun the ground must be labour-

iously raised by earth brought to the spot in boats or in mule-panniers; otherwise the sub-soil water will rise up into the basement during floods, destroy the foundations and swamp everything. The cemetery at Basrah offers another striking instance of the trouble caused by sub-soil water. From the earliest days of the arrival of British forces deaths were unfortunately frequent, but it was found that interments could not take place in otherwise suitable sites because the water rose in the graves long before they had been dug to the necessary depth. The consequence was that a cemetery had to be built up of earth piled several feet high, and the whole area of this cemetery (about $1\frac{1}{2}$ acres in extent) had to be surrounded by a retaining wall.

As regards supplies, those locally produced are of little value in supplementing those imported. This is not so much because local supplies are scarce as because, owing to transport difficulties both by land and water and to the attitude of some of the Arab tribes, the local supplies cannot be got in from the surrounding country in adequate amounts. Some local products, such as fresh vegetables and potatoes, are certainly scarce; but others like rice, salt, barley, bhoosa and ghee would suffice to meet all demands could they but be collected. Potatoes and vegetables present an additional problem in that the heat is liable to make them uneatable in a very short time. Where cold storage is impossible potatoes will sprout and other vegetables rot if they cannot reach the troops quickly and be consumed at once. Fresh meat could be obtained in ample quantities were it possible to induce the Arabs to bring in their cattle or to allow sheep to come down from the Persian hills. Grazing for horses exists in places, and during parts of February and March 1916 the horses with the Tigris Corps were able to dispense with the Government fodder; but grass cannot be depended on for long, and it rarely grows where it is most wanted.

The impracticability of drawing to the full on local products seriously affects the question of river-transport in that a great deal of tonnage is absorbed in carrying to the fighting troops supplies of all kinds that in any theatre of the war would certainly be obtainable on the spot. River transport is further handicapped by physical and climatic conditions affecting the rivers themselves. In the low-water season (August to February, both inclusive) the draught of vessels is limited to a maximum of 20 feet at the Outer Fao Bar, and this only under favourable conditions on the

top of the tide; transhipments are therefore often necessary. Between Basrah and Qurnah the draught of vessels proceeding up-stream is limited to ten feet in the low-water season. Between Ezra's Tomb and Qal'at Salih is a reach known as "the Narrows." The width of this reach is only about 65 yards. Its depth is not more than five feet during the low-water season, and it is neither safe nor practicable for one vessel to pass another unless the up-bound is banked in. Thus the scope of the Tigris as a line of communication is limited to the number of vessels which can move at one time up and down-stream through the Narrows. It is further limited by the fact that the Narrows are not navigable after dark, in fog or in sand-haze. In certain parts of the river owing to its narrowness, to the strength of the current, to the presence of sand-banks and to frequent high winds, it is extremely difficult to bank in when bound down-stream; a case in point is Qal'at Salih where vessels can only stop at great risk.

From the end of March to about the middle or end of July the current in certain reaches of the Tigris attains a rate of five knots and constitutes a further serious obstacle to navigation. It is an uncertain factor too, as it varies with the season of the year and in different parts of the river. Thus in the Narrows it might be anticipated that the current would be unusually strong in the flood-season: but this is not so, for the banks of the river in this locality are very low and the water overflows into the surrounding country so that vessels frequently run ashore through being unable to divine the river proper. From Kut to Amarah the current is very strong in the flood-season being pent in by comparatively high banks. During the low-water season of 1915 vessels of the "P" class reached Kut drawing over five feet, but only after overcoming almost insuperable difficulties.

On the Euphrates the conditions are less trying, there is little or no current and few difficulties present themselves till the entrance to the Hamar Lake is reached. This is very narrow and even in the high-water season it is inadvisable for vessels to attempt to pass. On the edge of the lake there is a bad bar carrying only about two feet of water in the low-water season and complicated by a tricky bend on the bar itself. The channel across the lake is devious but there are no difficulties for shallow-draught vessels in the flood-season. In the low-water season all traffic is stopped except for very small

native boats known as "bellums." Off Beni Hoteit and eight miles East of Hokeika there are two more bars but above Hokeika the Euphrates presents a broad, deep, easily navigable channel for any river-craft, and few difficulties remain except those due to sand-haze and wind which, in the form of the "Shamal," blows particularly strongly on the Hamar Lake.

The prevailing winds in Iraq are from the North and North-West, and the Shamal comes from the latter direction. It usually begins about the middle of June and blows more or less continuously for about 40 days although there are occasional lulls of from 24 to 48 hours duration. Its velocity occasionally reaches 40 miles per hour, and it has the effect of drying the atmosphere and of affording some relief from the intolerable summer heat. Other winds in Iraq are the "Sharqui" or East wind which brings high temperatures with it, and the South wind which is invariably oppressive and accompanied by dust. All the winds may produce shifting lakes and all affect shipping to some extent. The dust they raise increases the difficulties of observation for airmen and adversely affects their engines by choking them up. The artillery is also at times hampered by dust-haze, but their chief trouble is the mirage which (in the absence of aeroplanes) presents an almost insuperable obstacle to reliable observation of fire already difficult enough on a dead-level plain.

The pulling for horses and mules is very heavy in places, and even where the surface is good at first it soon cuts up and becomes heavy if a succession of vehicles attempt to make a track. The same applies with even greater force to mechanical transport where such can be utilized at all. Anything heavier than a 30 cwt. lorry will probably break through the desert crust and get bogged in the mud beneath. Where the ground is soft solid tyres will cut in from the outset, so pneumatic tyres are almost essential, but the "life" of a pneumatic tyre in Iraq is about one-tenth of that in Europe. The consumption of petrol is extraordinarily high (3 or 4 miles per gallon for Peerless lorries) owing to the impossibility of using the higher gears even in dry weather. In wet weather mechanical transport may be quite unable to move anywhere.

It will thus be seen that in Iraq all military problems whether strategical, tactical or administrative are affected by climate and physical conditions to an extent rarely met with in any

theatre of the war, and that the casualties from death and disease cannot but be abnormally high. Nearly all the conditions combine to create difficulties, few to alleviate them; and most may be ascribed either to a lack of water or to a surfeit of it. Far away from the rivers want of water makes operations impossible: near them excess of water is almost as great a source of trouble.

R. A. F. AND ARMY CO-OPERATION—THE OTHER POINT OF VIEW.

By Squadron Leader J. C. Slessor, M.C.

[The opinions expressed in this article are only the personal opinions of the writer and do not necessarily represent the views of the Air Staff.]

The article in the October number of the U. S. I. of India Journal, by Major R. G. Cherry, M.C., voices a point of view based on premises which we in the Air Force, in common with many soldiers, hold to be unsound. And it is the purpose of this article to put forward the other point of view, that of the airman who has the interests both of the R. A. F. and of the Army at heart, to argue with the premises which we hold to be false and to explain our reasons for that opinion.

It would be tedious to attempt to take Major Cherry's article and argue with it sentence by sentence; but before going on to give a personal indication of the other point of view, there are one or two statements in his article which are definitely misleading and which should not be allowed to go unchallenged.

The first is that "The actual art of flying an aeroplane can be taught in a few weeks to nearly any young, fit and active soldier." It is true that a young officer could be taught enough of flying in a few weeks to enable him to take an aeroplane off and land it again without breaking his neck. But it is a far cry from this somewhat rudimentary stage in the training of an airman to that state of instinctive skill required by the Army Co-operation pilot. Flying is not a black art, but like most other accomplishments, it requires constant and considerable practice before a pilot is really proficient; if an officer is to give anything like full value as an observer, in which occupation his whole time must be devoted to watching the ground, following his map, using his wireless, and so forth, the actual flying of the machine must not cost him a thought. It must be instinctive, and this only comes with practice. And this raises an extremely important point which must be borne in mind whenever the subject of this article is considered. Major Cherry quite rightly concludes that

the observer must also be the pilot. If then the pilot is to be an Army Officer, a gunner, he must have constant flying practice to keep him up to the mark as a pilot. How is this going to be done, for instance, under the conditions outlined in Major Cherry's solution (c) ? How are the Major or Captain and two subalterns of each medium or heavy battery to get sufficient flying practice to render their flying instinctive ? It's difficult enough for a Squadron Leader of an Army Co-operation Squadron, let alone for the Major of a heavy battery.

In this connection, on another page, Major Cherry gives the misleading impression that it is possible to do a reconnaissance after two hours flying. Certainly in the last war officers were sent on reconnaissance after a very short air experience, but with all respect it cannot be claimed that their reports were often much used. But reconnaissance under conditions of moving war, with troops trained on modern lines, is infinitely more difficult than it ever was under static conditions. It is axiomatic that to be of any use as an observer an officer must have very considerable practice in looking at troops and the movements of troops from an unwonted angle from the air. This is the case in peace, and its importance is redoubled when it comes to war, with its altered moral and physical conditions.

One further inaccuracy needs correcting, which is probably a slip of the pen. Major Cherry states that our present organisation allows one squadron per corps; this was the case during the last war, and was amply sufficient for the needs of static war, but the present organisation in England is one Army Co-operation Squadron to each Division. Which is what Major Cherry demands.

Major Cherry writes as a gunner, and his article deals mainly with the problems of air-artillery co-operation. But it is called "Royal Air Force and Army Co-operation" and it raises one point which is of the utmost importance and should be clearly understood. It is stated that, at least in the early stages of the campaign, and "owing to the importance of the work and the difficulty of training Air Force observers in peace, the Army Commanders would prefer to send up Staff Officers who know the strategical position and who at the same time have been trained to carry out observation from the air." In passing it should be observed that it should on the face of it be less difficult to train Air Force observers than Army Staff officers in peace,

and that the time when you really will be able to count on good and reliable air information from Air Force observers will be in the early stages of a campaign before the really skilled and experienced observers become casualties. However, the important thing to consider is the point of view which gives rise to the statement quoted ; it is a point of view very widely held, and at the bottom is based on a fallacy, namely, that it is possible to make reliable deductions in the air. *It is not only impossible, but it is excessively dangerous.* This is not a point of view, but a statement of absolute fact. In a naval battle, and possibly in some parts of a few open treeless sandy countries like Palestine or Iraq, you do get the panoramic view from the air, and it may be possible to make accurate deductions from what you see, but under European—and most other—conditions, you absolutely definitely cannot. And for this reason the R. A. F. observer must be, and is, trained to report exactly what he sees ; he must have a knowledge of Army formations, and of how the Army works, in order to help him identify what he sees. But the moment he tries to draw deductions, and to report tactical or strategical situations he, and any other observer whatever his rank or service, becomes a public menace. Major Cherry quite rightly says that air information must be supplemented by, and compared with, information supplied by the older forms of reconnaissance ; and to attempt to size up a situation, on however small a scale, without the aid of those other sources of information and without the close personal touch only possible on the ground, is to court trouble. Even in open moving war the air observer, however skilled he may be, fails to see so much that is important, and perhaps unconsciously he attaches such importance in his own mind to what he does see, from the mere fact that he has seen it with his own eyes, that his estimate of the general situation will probably more often than not be so distorted as to be almost irreconisable when compared to a review of the actual situation. When finally it is considered how much reliance—from psychological reasons—a commander is bound to place on the report of one of his own staff who has seen with his own eyes, it will be realised how terribly dangerous such a proceeding may be. There was a case of this in the last manoeuvres. A senior staff officer, with considerable air experience did a reconnaissance in an aeroplane ; his report of the situation, based on a quite naturally exaggerated estimate of the importance of what his eyes had seen, and neglecting what

he had inevitably missed seeing, was so inaccurate as to have been almost fatal had it been believed against the words of the experienced Air Force observers.

It may be argued that this is a temporary condition, that as observers become better trained, especially in military knowledge, and as we become more accustomed to the conditions of moving warfare, it will become possible more accurately to size up a situation from the air. But, on the contrary, all recent experience tends to confirm the view that the reverse is the case, and that it will become more, not less, difficult to make an accurate estimate of the trend of events on the ground from air observation alone. Not only are modern troops becoming exceedingly well trained at concealment, but another factor is being introduced. It is the old story, that for everything that threatens to revolutionize war, an antidote is found: as air reconnaissance became more efficient it began to look as though here was a revolution in war; we could see the other side of the hill at last, and at any rate strategical surprise looked like becoming a thing of the past. Concealment of large bodies of troops on the move is impossible, troops cannot continually move at night and fight by day, and constant concealment measures tend to slow up movement to an impossible degree. But the antidote to air reconnaissance is now apparent, and the answer is *Deception*. Well thought out, carefully organised deception can be easily and economically carried out, and will defeat the air observer every time. As well as a certain amount of concealment, deluding the observer into thinking that an area is not occupied by troops, we (and other armies) will now practice deception, deluding him into thinking that an area is occupied. With 50 men, a few horses and limbers, the artistic use of smoke, and perhaps an obsolete tank to make tracks into woods, it would be possible to simulate a dummy occupied area which not even the most skilled and experienced observer in the world would be able to distinguish from the real thing. It is unnecessary to labour the obvious point that all this increases tenfold the importance of the observer reporting only exactly what he sees, leaving it to the staff on the ground to make the deductions. "4 limbers half concealed under trees here—this village apparently occupied, a few men seen moving round mosque—5 or 6 small puffs of smoke coming out of wood here—apparently tank or dragon tracks there—" and let the man in the Divisional or Corps office, who has all the other clues, all the other sources of information at

his finger tips, decide whether the missing enemy brigade really is in the area, or whether it is only deception.

Turning to the Artillery side of the picture, many of the arguments against the artillery officer controlling the fire of the battery from the air have been, as Major Cherry says, ably set forth in the Air Ministry memorandum to which he refers, and there is no need to repeat them here. But it is necessary to point out that very much the same arguments apply to this question as to that discussed above. The man in the air is only able to see the situation from one point of view, which is a very detached one. He has no direct contact with the situation on the ground, or with the minds of the various commanders who are directing it. Major Cherry himself produces excellent arguments against tactical control from the air of light artillery supporting an infantry attack, and it is difficult to see what case he has made for fire control from the air in any other circumstances. He admits that hostile reserves, transport, and guns will be distinguishable from 3,000 feet, but he does not explain what is the matter with the present method of dealing with such targets. If the pilot of the artillery machine sees these targets (and if he does not, there is no reason why a gunner officer should) he will report them and offer to observe fire on them, by one of the usual methods such as A.N.F., B.N.F., or F.T.G. call. It will then be for the C.R.A., or at least the Brigade Commander on the ground—not an isolated captain in the air—to decide in the light of his knowledge of the situation on the ground which of the proffered targets to fire on, and the air observer will then inform him, or the battery commander concerned, by W/T—not R/T for Heaven's sake—where his rounds are falling.

A word about radio-telephony (R/T) which Major Cherry says now provides a medium for controlling artillery from the air. It has a very attractive sound, that word "telephony," but it is full of snags. R/T instruments are delicate and difficult to operate, and the jamming properties of R/T are bad; at present it is used only by the close reconnaissance patrol, but the tanks are experimenting with it, and it has been tried by the artillery. But anyone who had any experience of it during the last manoeuvres, when all the wireless resources of a comparatively large force were in action, will remember the chaotic condition of the ether at that time and will view with dismay any threat to increase the amount of R/T speech that must fly about. It is

true that R/T for military purposes is only in its infancy, but it is probable that for a long time to come, and possibly for ever, wireless telegraphy and the morse code will be a quicker and more reliable method of communication than R/T. W/T is speedy, can be easily adapted to a code, its jamming properties are not so bad as those of R/T, and W/T signals can be distinguished from among a mass of other wireless traffic when R/T speech at anything but very close range would be quite indistinguishable. Therefore, let us not embark too lightly upon R/T for the artillery; otherwise the end will be that by attempting to use too much R/T we should be unable to use any, and that would be a disaster.

The foregoing is an attempt to indicate "the other point of view" of the subject as a whole. Before closing this article there are one or two minor points in Major Cherry's article which it may be of interest to consider from another angle.

(a) Major Cherry considers it will be necessary to have six machines continually in the air operating with the artillery allotted to a division, in addition to balloon observation. Add to this one, or probably two, close reconnaissance machines in the air all day, and we arrive at a total of eight machines in the air at once. Not only is it definitely impossible, from a wireless point of view, to work eight machines at once on a divisional front, but also it would require nearly three squadrons to do it. One squadron can only be counted on, in the summer, to keep three machines continually in the air from dawn to dusk, with an occasional additional machine for some special work such as photography. This figure might be increased to four in good weather at mid-winter when the days are short.

(b) Many will sympathise with Major Cherry's plea that the Air Force should "specialize seriously" in Army Co-operation. But on this subject again there is the "other point of view." One of the most difficult problems that faces an air force is the question of reserves to replace casualties in war. This problem cannot be solved for the army co-operation squadrons by seconding many young officers from the army; the army will not be able to afford to send off a large proportion of its younger officers as reserves to the Air Force, and indeed by the time these young officers are needed to replace casualties in army co-operation squadrons they may well be casualties themselves. The sources of supply of casualty replacements for the army

co-operation squadrons in war will be firstly, the Reserve of Air Force officers, which contains an increasing number of experienced army co-operation pilots, who will only need a little polishing up when war breaks out to make them efficient again; and secondly the rest of the R. A. F., the Home Defence Force especially. Therefore our policy is to build up in the R. A. F. Reserve a good body of pilots who have done their short service time with army co-operation squadrons, and rather than make a permanent officer spend his whole career in army co-operation, we should only keep him till he is thoroughly trained, and perhaps a year longer, and then send him away from army co-operation altogether, to the Home Defence Force and train others in his place. So that that force will in time contain a certain number of trained army co-operation pilots who may be available to replace casualties in the expeditionary force. It is no good having a small super-efficient body of specialists with few or no trained reserves behind them.

As to the danger, to which Major Cherry refers, that army co-operation pilots may be called on in a national emergency for Home Defence, this presumably is possible, and is rather beyond the scope of this article. But if a national emergency arises so serious as to demand the calling in of army co-operation pilots to re-inforce the Home Defence Force, surely the Cabinet will order that every man who can fly, be he soldier, sailor, tinker or tailor, is devoted to that end. If the emergency is not sufficiently serious then the army co-operation squadrons will not be touched in any case, and there is no need to worry about it.

(c) Although it is of great importance that army co-operation pilots should have a thorough knowledge of the army, yet it is possible to make exaggerated claims in this respect. The subaltern officer seconded from the army to the Air Force makes a good army co-operation pilot-observer; but on the whole he does not usually make a better one than his brother officer from Cranwell or on the Short Service List. Nor as a matter of fact does the average seconded gunner subaltern make a better artillery observer. This is only the personal opinion of the writer, but it is based on considerable experience of army co-operation both in peace and war.

Finally, let us not come to expect too much of air observation. It is of the very greatest value, and without it an army to-day would be like a man groping in the dark, but it has

its very definite limits, and it is probable that we have nearly reached them. We cannot do everything from the air, it is even now a complicated job, and we must look for simplification. As Major Cherry so rightly says, the system must be fool-proof, or it will break down under the test of war. Let us remember that as fighting services we exist for war and that the systems we evolve to-day will have to be worked under more difficult circumstances by the far less highly trained personnel who are bound to have to succeed and reinforce us after a few months of war.

MILITARY NOTES.

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Military and economic interests, and the development of communications, on the Asiatic Mainland.

JAPAN.

1. *Japan's strategic interest in the mainland.*—The geographical position of the Japanese islands is analogous to that of the British Isles. As island states they share the military advantage of having no land frontier. Equally they have learned, by experience in waging war on the continent, that command at sea is essential, and that their frontier is the enemy's coast. Similarly also, air developments (although the Japanese so far lack experience in air warfare) are likely to cause the Japanese General Staff to regard their frontier, for purpose of defence, as extending beyond the coastline into the territory of the mainland.

The Japanese islands, throughout their length, lie close to the continent and enclose the Sea of Japan, which has but narrow outlets to the Pacific. Japan's security from continental invasion is therefore dependent upon her ability to maintain supremacy in the Sea of Japan, and to ward off any potential enemy from the coastal fringe of the mainland.

The territory on the mainland that is washed by the Sea of Japan comprises Korea, the Maritime Province and (inland from the coast) Manchuria. Up to the middle of the 19th century all that territory belonged to the Chinese Empire. Since then the following changes have taken place :—

- (i) Korea in 1905 became a Japanese protectorate, and having been formally annexed in 1910, it has become an integral part of the Japanese Empire.
- (ii) The Maritime Province, ceded in 1860, is now Russian territory.
- (iii) Manchuria is still Chinese territory, but in it Russia and Japan are well established by arrangements with China.

Russia, in 1896, obtained permission to construct across Manchuria the Chinese Eastern Railway. This railway is 5 ft. gauge and is still claimed by Soviet Russia.

Japan, by the Treaty of Portsmouth in 1905, obtained a transfer from Russia of a lease of "the railway between Chang-

chun and Port Arthur and all its branches." This railway is now known as the south Manchuria Railway (standard gauge, 4 ft. 8½ ins.). In 1915 Japan arranged with China for an extension of that lease up to the year 2002.

Since Korea has been a Japanese possession it has ensured their complete command of the Korea Strait, and afforded them a sense of security on the mainland within the limits of its territory. As the Maritime Province is a Russian province over which Soviet Russia still claims sovereignty, there is little likelihood of Japan being able to acquire that territory by peaceful means. Nevertheless, the Japanese Government, in time of peace, has the alternative of laying claim to the hinterland by making further arrangements with China, and increasing its already powerful influence in Manchuria. The Japanese hold on Manchuria would render its immediate occupation possible in the event of war. Thus it is that the claim of Japan to "paramount" interests in Manchuria is inspired fundamentally by the demands of security.

2. *Japan's economic interest in the mainland.*—Japan is interested in the Asiatic mainland for economic reasons. "The Economic Outlook" in Japan has been the subject of a series of articles published recently in this Summary. In these articles it has been shown that the islands of Japan do not constitute an adequate economic base, and that for raw material required for essential supplies in time of war, Japan is dependent largely upon foreign countries. Therefore, the resources of Korea and Manchuria, if developed for the exclusive benefit of the Japanese, will enlarge their economic base in Asia and help them to become a more self-supporting Empire.

3. *Japan's need for good communications.*—Japan's primary need on the mainland is good communications. Good communications are essential to her schemes both for military security and economic development. The Japanese Government realized this long ago, and gained the necessary concessions from China for its projects in Manchuria. Japanese money is now being spent on roads and railways in Korea and Manchuria up to the limit of, if not beyond, the means of the Japanese Treasury.

4. *Roads in Korea.*—Roads in Korea are bad, the majority of them being little more than tracks. Before the war of 1904-05, nothing but tracks existed in Korea, and one of the most noteworthy achievements of Japanese rule has been the systematic construction of a comprehensive network of roads. By the end

of 1912, 131 miles of State roads had been constructed. The Government then commenced to undertake a scheme of road construction covering 10,400 miles. The following figures are derived from the latest statistics available, dated 31st March 1923 :—

| Class of road. | Finished. | Unfinished | Total. |
|------------------------|-----------|------------|--------|
| | Miles. | Miles. | Miles. |
| 1st class roads | 1,493 | 492 | 1,985 |
| 2nd " " | 3,690 | 2,292 | 5,982 |
| 3d " " | 4,407 | 2,693 | 7 100 |

Roads were classified as follows :—

| | |
|------------------------|---------------|
| 1st class roads | 24 feet wide. |
| 2nd " " | 18 " " |
| 3rd " " | 12 " " |

The metalling of roads is carried out in the usual Japanese fashion—stones are thrown on the surface and left to be worked in by the traffic. Roads are required at present only for native transport, *i.e.*, bullock carts, and for light motor vehicles. In the whole of Korea it is estimated that there are only 1,088 motor vehicles, of which the heaviest is a Ford 1-ton truck, while the number of bullock carts exceeds 89,000. The roads, in their present condition, are unfit to carry heavy military transport for sustained periods. The lack of substantial steel or stone road bridges would prove a serious handicap to the use of modern mechanical transport. In this respect, however, it must be remembered that the Japanese Army is not yet dependent upon mechanical transport for administrative purposes in war. As regards future developments, besides improving existing roads generally, it is believed that work on a scheme for the construction of frontier roads is to begin this year (1925).

5. *Railways in Korea.*—On the outbreak of the Russo-Japanese war on the 6th February 1904, the only railway actually completed was the branch line from Seoul to Chemulpo. By May 1905 the Seoul-Fusan line was opened, and during the war a line was hurriedly built by the Japanese between Seoul and Wiju (near Antung), which has since been reconstructed.

The railway system, which is standard gauge (4 feet 8½ ins.) may be described as follows :—

The main line—

Fusan-Seoul-Antung (where it joins the South Manchuria Railway, also of standard gauge).

The principal branch lines—

Taiden-Moppo—Completed.

Seoul-Chemulpo—Completed.

Pingyang-Chinampo. — Completed.

Seoul-Gensan— Completed

Gensan-Kwainai— Expected to be complete in 1927.

Pingyang-Gensan—Survey not completed, construction not yet begun.

Fusan-Gensan— Project indefinitely postponed.

All the standard-gauge railways in Korea are State-owned. In 1918, the Japanese Government, considering single control advisable, leased all State railways in Korea to the South Manchuria Railway Company, but after 31st March 1925, they were taken over again by the Government. At the end of 1924, the total mileage of Korean State Railways was 1,300 miles (single line throughout). This mileage is considerably less than half that in Ireland or New Zealand, although Korea has twice the area of Ireland and is nearly as large as New Zealand.

With regard to rolling stock, there are at present 247 locomotives of all types, 494 passenger cars, and about 1,500 covered and 1,000 open wagons and trucks.

The number of trucks available in the peninsula is inadequate for military transportation on a large scale.

6. *Light railways in Korea.*—The development of light railways in Korea is due largely to the fact that the Japanese Government has granted subsidies to private railway companies.

The total mileage of light railways in Korea, at the end of 1924, amounted to 399 miles.

One light railway system is projected, or under construction, up the Yalu river, to connect with another system based on the north-east coast. These systems will connect the frontier with the broad gauge railways. There is also a network of light railways to be completed in southern Korea, designed to feed the Taiden-Moppo line.

7. *Roads in Manchuria.*—Roads in Manchuria are bad, and for the most part unmetalled owing to a scarcity of stone. As a means of trading they are secondary to rivers, which are used extensively. The railways are inadequate for the full development of the country, but, owing to a lack of roads to feed existing

railways, the construction of roads appears to be the more pressing need. Be that as it may, there seems to be no important road constructions now in progress in Manchuria, except the road from Dairen to Port Arthur (21 miles) in the Japanese leased territory.

8. *Japanese railways in Manchuria.*—Japan operates the South Manchuria Railway and the Mukden-Antuang section. The northern terminus of the South Manchuria Railway is at Changchun Junction, where it meets the Chinese Eastern Railway (5 ft. gauge), built and owned by Russia.

Between Changchun Junction and Kirin there is a standard gauge railway which was opened in 1912. This is operated as a branch line of the South Manchuria Railway and, although it was originally controlled by the Chinese, the entire control passed in 1916 to Japan.

Between Kirin and Hailungfu, there is a railway projected and surveyed; also between Hailungfu and Kaiyuan, which is on the main line of the South Manchuria Railway. Work on this line is expected to commence shortly.

Between Kirin and Kwainai, a railway line is projected and under construction, but so far, about 50 miles only, out of a total length of 262 miles, has been completed; this line will make a connection at Kwainai with east coast line in Korea.

In the opposite and north-westerly direction from Changchun Junction there is the projected Changchun-Taonanfu line. Taonanfu is already connected with the South Manchuria Railway by the Szeping Kai-Chengchiatung-Taonanfu branch line, and from Chengchiatung there is another branch line completed as far as Tungliao—a distance of 70 miles.

Taonanfu appears likely to become an important railway centre in the Japanese projects; for apart from the scheme of having two lines connecting it with the main South Manchuria Railway (at Szeping Kia and Changchun respectively), a concession has been obtained from the Chinese Government for the construction of a line from Taonanfu northwards to Khurkura, near Tsitsihar. This project will bring the Japanese communications into direct contact with the main line of the (Russian-owned) Chinese Eastern Railway.

In spite of the priority given by the Japanese Government to expenditure on railways, progress is decidedly slow. This can be accounted for partly by the fact that in reality Japan has

little money to spend, and partly because there are considerable engineering difficulties. Little progress is anticipated in Manchuria until 1927 or whenever the coast railway in Korea has been completed.

9. *Economic aspect of these communications.*—Korea is, and will long remain, primarily an agricultural country. Over 80 per cent. of its population is employed in agriculture, forestry, pasturage and cattle rearing.

The railways are used largely for carrying agricultural produce; the light railways in particular are now bringing additional districts, where rice is the principal product, into communication with the various seaports. The rice crops in Korea amounted, in 1923, to 15,213,189 koku, which is the equivalent of 3,067,175 bushels. More than a quarter of rice produced in Korea is exported to Japan.

The light railways in the vicinity of the Korean frontier are also designed largely to facilitate the transportation of timber from the vast forest lands along the upper portions of the Yalu and Tumen rivers.

Korea's mineral resources are only partially developed. Money and railway facilities are required for their further exploitation.

Japan takes 92 per cent. of the total export trade of Korea. In Manchuria the railways conceded to Japan serve as a backbone to the growing strength of her economic position. When the South Manchuria Railway was assigned to Japan in 1905, included with the railway were "all coal mines belonging to it or worked for its benefit." Of these mines, the Fushun collieries are the most important. By 1908, Japan had converted a light railway to Fushun into a standard gauge branch line of the main route. Coal is now exported from Fushun as far south as Hong Kong. Branch lines to Tannanfu serve a useful economic purpose, for in that area, land has been leased to Korean farmers and, by agreement with the Chinese authorities, half the rice crops are exported to Japan. By means of the Kirin-Changchun branch line, opened in 1912, the fertile wheat growing plains of the Upper Sungari River have been brought under Japanese control. By the Kirin-Hailungfu-Kaiyuan line, several market towns will be tapped. The Kirin-Kwainai line will also carry the produce of this area and further east will open up the Chientao district which is rich in minerals.

Apart from these local economic advantages, the Japanese Government is endeavouring, by means of its railways, to capture Russian trade passing to the port of Vladivostok. At present, it is trying to divert that trade by means of the South Manchuria Railway to Dairen. In due course when through railway communications exist between Kirin and Gensan, no doubt the Japanese will likewise make every effort to divert even more of Russia's trade from Vladivostok, to their Korean ports.

10. *Military aspect of these communications.*—The military operations in which Japan might become involved on the Asiatic mainland may be visualized as follows:—

(a) The defence of Korea.

(b) A conflict, with some rival power or powers over concessions or her claim to "paramount" interests, in South Manchuria.

The defence of Korea, in so far as communications are concerned may be examined from two points of view—the defence of its land frontier and the defence of its sea coasts.

The Korean frontier, which follows, almost throughout the courses of the Yalu and Tumen rivers, is at present badly served with lateral communications. However, the light railways and roads along the frontier, now in process of construction, will undoubtedly be of strategic value. As regards forward communications to the frontier it seems likely in spite of the development of road construction that now, as in the Russo-Japanese war, any line of approach would be confined to the line of the railways.

With regard to land communications between the sea coasts the Korean state railways connect the port of Gensan on the east coast, Fusan on the south, Chinampo and Chemulpo on the west, with Seoul the capital. Gensan and Pingyang are also connected direct by a first class military road; and the projected line between these two places designed to join the Pingyang-Chinampo branch line, will bring the port of Gensan and the port of Chinampo into direct communication by rail. The importance of this cross connection lies in the fact that it is situated at the narrowest part of the peninsula. These communications link up the places which the Japanese used for the landing of troops when they themselves were the invaders of Korea:—

(i) In 1592 the Japanese landed troops at Fusan and proposed, though did not succeed in the attempt, to make further landings on the west coast.



(ii) In the Sino-Japanese war in 1895, the Japanese made landings at Fusan, Gensan and Chemulpo, and made a converging movement on the Chinese forces.

(iii) In the Russo-Japanese war in 1904 the Japanese landed troops at Chemulpo and Chinampo.

It is unlikely that the Japanese would take up the Korean frontier as their line of defence, unless such a measure were forced upon them. After the experience of the Russian war of 1904-05, the Japanese General Staff are determined to meet any future threat as far inland as possible. Thus the Japanese communications in Manchuria are of strategic value, both to the defence of Korea and for the launching of a campaign in Manchuria.

Japan already has railheads at Taonanfu, Changchun and Kirin; all of them bring her appreciably near to the Chinese Eastern Railway, which may be termed the Far-Eastern section of the Russian Trans-Asian route. A concentration of Japanese troops on a wide front along the Chinese Eastern Railway would facilitate the cutting off of Russian communications by that Railway with the port of Vladivostok. In this forward zone, Japan's lateral communications are far from adequate. This deficiency may well be overcome by the completion of the projected railways, which link up the railheads of Taonanfu, Changchun and Kirin with Kwainai. The total distance from Taonanfu to Kwainai is 492 miles, which is a longer distance by some 50 miles than that from Dairen to Changchun. This lateral line—from Kwainai to Taonanfu—and, parallel with it, the Chinese Eastern Railway (if it were successfully seized by the Japanese), would afford them valuable lines of communication for a turning movement westwards in driving their enemy from the Sea of Japan.

11. *Conclusion.*—Both Korea and Manchuria are agricultural countries. Unlike Japan, they are not experiencing the effects of rapid industrialization, with the result that their food supply is still adequate and their standard of life not raised. For this reason, the facilities offered in Korea and Manchuria by Japan's system of communications, far exceed the requirements of the local inhabitants.

From a military point of view, these communications will give Japan a greater advantage on the mainland than she possessed in 1904.

Thus the existing and the proposed construction of roads and railways in these countries is calculated :—

- (i) To further Japan's aims for economic independence.
- (ii) To protect the land frontier of the Japanese Empire.

II.

ITALY.

COLONIAL ACTIVITY IN TRIPOLITANIA.

1. *History.*— In order to appreciate the Italian administration in Tripolitania at its proper value, it is necessary to have in mind the main facts of the history of this part of Africa during the last 15 years. On the outbreak of the Turco-Italian war in 1911, Libya, comprising the two provinces of Tripolitania and Cyrenaica, formed part of the Turkish Empire. The Italian campaign aimed at the conquest of Libya, which on the conclusion of peace in 1913 became an Italian colony. The inhabitants did not welcome their new masters and the country was still in a very unsettled state when Italy entered the Great War in 1915. The Arabs did not fail to exploit to the full the opportunity given to them by the fact of Italian attention being centred on the campaign in Europe, and from 1915, onwards practically nothing but the coast town remained in Italian occupation.

From the conclusion of the Great War down to the present time Italy has been engaged on the task of re-occupying and pacifying the country, until now, as far as Tripolitania is concerned, an area of country some 400 miles long and 200 miles wide at its greatest width, and stretching from Sirte on the coast to Ghadames on the Tunisian frontier, has been re-occupied. There can be little doubt that the chief credit for this achievement belongs to Count Volpi, who until July 1925, was Governor of the colony.

2. *System of government.*—Both the civilian administration and the supreme military command are vested in the Governor who is assisted by a Deputy Governor and by a General Officer Commanding with a military staff. The colony is divided into three zones—the Western, Eastern and Southern. The form of government is partly military and partly civil, areas passing from the former to the latter as they become pacified. The whole of the Western zone is now under civil control, while the other two, with the exception of one district in the Eastern zone, remain under the military.

3. *Garrison*.—The garrison of Tripolitania consists of the following, in addition to headquarter staffs :—

| | Total strength. |
|---|--------------------|
| (a) A division of Carabinieri, who perform all the police work of the colony | 1,365 |
| (b) Two battalions of "Cacciatori." These are regular Italian troops made up as far as possible of volunteers. At present, however, it is necessary to make up 60 per cent. of their strength with conscripts. The word "Cacciatori" is the same as the French chasseur ... | 1,542 |
| (c) One armoured car squadron (12 cars) | 56 |
| One tank company (7 tanks) | 61 |
| (d) Three companies of engineers (including signals) ... | 877 |
| (e) Five Libyan battalions, recruited locally | 3,889 |
| (f) Six Eritrean battalions, specially enlisted in Eritrea for service in Tripolitania. It is proposed to add a seventh battalion shortly, when total strength will be | 5,765 |
| (g) Seven squadrons of "Savari" or cavalry. The word "Savari" being of the same origin as the Urdu word "Sowar" | 966 |
| (h) Three "Saharan groups," each consisting of headquarters, a camel platoon, a mounted infantry platoon also on camels, an infantry platoon with machine gun section on camels, a section of pack artillery on camels | 970 |
| (i) One squadron of "Spahis," chiefly employed on guarding caravan routes and the prevention of contraband trading on the Tunisian frontier ... | 233 |
| (j) Three pack batteries, each armed with four 65 m.m. guns | 606 |
| (k) Four companies of garrison artillery | 667 |
| (l) A suitable proportion of administrative units and services | |
| The grand total is made up as follows :— | |
| Italians—Officers | 556 |
| Civilians in military employ | 114 |
| Under officers | 603 |
| Other ranks | 3,961 |
| Natives—Libyans | 8,961 |
| Eritreans | 5,620 |
| Total | 19,117 |

Of the above total only 1,779 are officially regarded as belonging to non-combatant bodies.

The garrison is further supplemented by the following, which are not included in the recognized establishments :—

| | | | | Total strength. |
|---|-------------------|-----|-----|--------------------|
| One cohort of National militia (Fascisti) | ... | ... | ... | 750 |
| Native irregulars | The Kerbish group | ... | ... | 1,000 |
| | Irregular bands | ... | ... | 1,800 |
| | Local guards | ... | ... | 900 |
| Total | | | | 4,450 |

making in all a total of 23,567 all ranks, exclusive of reservists and Air Force. The latter maintain 83 aeroplanes and necessary depôts and repair shops in the colony.

4. *System of Military Control.*—It is recognized that under the conditions prevailing in Tripolitania, mobility must be the keynote of military operations and that, in order to ensure mobility, the first essential is to reduce transport and supply columns to the utmost extent.

Apart from the coastal towns, which are organised as entrenched camps and can always meet any requirements, the Italians have therefore established throughout the country fortified depôts whence troops can at all times draw supplies at the shortest possible notice. The depôts are dotted along the main routes and are generally not more than two or three marches apart. At present there are about 20 of them, the most important being at Gadames, Nalut, Giado, Jefren, Gharian, Mizda, Tarhuna, Gusbat, Beni Ulid, Bir Dufan (midway between Beni Ulid and Misurata), Bir El Ghebabbia (47 miles south of Tauorga), Buerat El Hsun (on the coast) and Gazr Bu Hadi (about 12 miles south of Sirte).

The depôts are protected by detachments of Italian and native troops. The former generally provide the actual garrisons whilst the latter furnish the first reserves and the reliefs for mobile forces. This practice of employing natives rather than Italians for active operations appears to have taken firm root. The natives are more accustomed to hardships, they are better marchers, and it is said that, under Italian officers, they can be relied on to fight well without any stiffening from Italian troops.

Besides the fortified depôts, mobility is facilitated by—

- (i) A network of motor roads that is rapidly extending in all directions over the whole colony ;

- (ii) An ever-increasing number of emergency landing grounds and of aerodromes provided with hangars ;
- (iii) The sinking of new wells along all routes likely to be used for military purposes.

Inter-communication is ensured by telegraph and telephone lines, wireless stations, a pigeon post, and orderlies mounted on motor-bicycles, horses or camels. For the guidance of troops and aircraft, and for keeping stretches of country under observation by night, some fortified posts (Beni Ulid, for instance) are provided with powerful searchlights.

Based upon the dépôts described above, and always ready to move quickly along any of the lines of communication between them, are the mobile troops, which may be divided into the following five categories :—

- (i) *Principal mobile columns* on the main line of observation which runs, broadly speaking, from Gadames to Sirte. The strength of each column varies according to circumstances, but is usually 3 or 4 Libran or Eritrean Battalions, 1 or 2 squadrons of cavalry, 1 pack battery, a small supply column and a field wireless section. In April, 1925, there were two such columns; one in the Eastern Zone, known as the Gruppo Mobile dello Zemzem after the wadi of that name, the other in the Southern Zone, called the Gruppo Mobile del Soffegin after another wadi.
- (ii) *Secondary mobile columns* north of the main line of observation. These columns now number 4; they generally consist of not less than a company of infantry with a troop of cavalry. They operate behind and in the gap or gaps between the principal columns.
- (iii) *The three Saharian groups* which patrol out in front of the main line of observation.
- (iv) *The Kerbish group and the Irregular bands* which serve to supplement the action of the mobile columns and Saharian groups.
- (v) *The local Guards* for the protection of crops, cattle and other property.

In addition there are, of course, the "lieutenancies," "sections" and stations of the carabinieri spread all over the country from the sea to a line running roughly from Nalut through Beni Ulid to Taugorga.

Thus almost the entire colony is covered with what the Italians call a "moving net" whose human meshes have "perpetual motion" as their motto.

Incessant observation, by ground and air reconnaissance, makes it almost impossible for rebel bodies to assemble unseen; if they do assemble and manage to penetrate, they find it impossible to get out again.

The utmost importance is attached to the collection and rapid transmission of military intelligence. Most of the information required is obtained by the troops themselves, but the effort of the troops are supplemented by a secret service. Details regarding this organization are naturally not obtainable, but it appears to consist of a relatively small number of reliable native agents. They may be either "travellers" or "sitters" and are kept in permanent employ.

The Italians declare that the "moving net" system described above has proved to be efficient and also economical in the matter of men. They claim to have effected the reconquest of the colony (since 1922) *with a field force of native troops averaging no more than 12 battalions, 10 squadrons and 3 pack batteries.*

The methods of warfare adopted by the hostile tribesmen do not differ in any material respect from those which similar foes have employed against British troops for generations. It is noteworthy, however, that in Tripolitania the number of tribesmen taking part in any given combat is always greater than the number of rifles they carry. The explanation is that, since the tribes never have enough firearms for everyone, unarmed men accompany the armed men from the outset so as to be ready to take up the arms of the fallen immediately.

The tactical formation favoured by the Italians when fighting is likely corresponds most nearly to what we should call "artillery formation." They claim that this gives them the greatest freedom of manœuvre to meet unexpected attacks from any direction, and that it is by far the easiest to control. As a rule, the banner of the commander (carried in the centre and well forward) can be clearly seen; it serves as a beacon to all concerned, and these regulate their movements as required. When messages have to be sent they are carried by mounted orderlies. Visual signalling, wireless or other mechanical means are not used either on the march or in action.

CORRESPONDENCE.

DEAR SIR,—In your last issue PINDI criticises some ambiguities in F. S. R. II, Chapter X, dealing with Night Operation. I have met the same difficulty myself. I think this Chapter needs re-arranging, and it would make it easier to understand if the definitions were collected at the beginning.

Section III, para. 2, defines *Night Operations* and in sections 112 to 117 there are numerous terms, some of which are defined at once, while the meaning of others has to be dug out elsewhere, or even deduced. Thus :—

A Night March is a march by night in ordinary march formation. (Deduced from sections 113, para. 1 and 115, paras. 1 and 3)

leading to

The Position of Assembly, the place where the ordinary march formation is abandoned. (Sections 113, para. 1 and 115, para 1).

From here further progress is made by

A Night Advance, a forward movement by a force deployed, (sections 115, para. 1 and 118, para. 1, (ii) (XV)

leading to

The Forming up Place where the troops take up the formation in which the night attack will be made. (Deduced from sections 115, para. 4; 117, para 3, 4, 5 and 118, para. 1 (V), (VI), (XV)

and finally

The Night Attack, is an attack delivered during darkness (section 117, para. 1) and not an attack at dawn (section 111, para. 3).

We may imagine a night operation leading up to a night attack by a Brigade would consist of the following places :—

(a) A night march to the position of assembly.

(b) At the position of assembly the Brigade would deploy, i.e., Battalions would get their intervals, distances from one another, but Battalions themselves would adopt an easily controlled formation, such as line or lines of companies in fours at a few paces interval and distance.

A whole day might intervene between (a) and (b) (Section 117, paras. 2 and 5).

(c) In this formation the night advance would be made till the forming up place was reached.

(d) Here the companies, platoons and sections would get into the formation in which the night attack would be delivered.

If the operation was to be carried out by a small force, such as a single Battalion, it would often be possible to eliminate the "Night Advance" and to "Form up" at the "Position of Assembly."

I quite agree that the term *Position of Assembly* as at present used, is a misnomer and misleading. The real position of assembly is the place from which the night march starts. The place at which normal march formation is abandoned should be called the *position of deployment*, for this is what really happens there.

PINDI will probably agree that in the case of a large force we require a *forming up place* in addition. It will be noted that section 115, para. 4, says that the remainder of the *advance* is made from the position of assembly. But as I read it, this does not include the *attack* which, *vide* sections 115, paras. 1 and 5; 117, paras. 4 and 5; 118, para. 1 (V), (VI), (XV), is made at the conclusion of the *advance*.

I am not attempting to lay down the law to PINDI, or anyone else, but only to give the conclusions arrived at after pondering over the same difficulties as have confronted him.

The numerous cross references I have had to make show, I think, the need for re-casting F. S. R., Vol. II, Chapter X.

Yours faithfully,

B. G. PEEL,

Lt.-Colonel.

DEAR SIR,—May I add a fourth suggestion to the three put forward by Major Cherry in your Journal for October 1925, as a means for improving conditions of co-operation between the Army and the Royal Air Force?

I would suggest that we look to the Royal Navy for our example. In that service, officers may—and are encouraged to—specialise in certain branches of their profession. These include

Gunnery, Torpedoes and Electricity, Signals and Engineering. An officer who does not specialise in any of the above remains on the Executive list, his duties consisting of watch-keeping, commanding boats, crews, etc., or gun crews when in action.

An officer who elects to specialise in any branch of his service, undergoes a long and very complete course in the technical duties of that branch, and having done so, these duties will be permanently his, until he reaches the rank of captain.

Would it not be possible for the Royal Air Force to adopt a similar system? Could not officers be induced to take up Naval Reconnaissance, Naval Gunnery, Army Reconnaissance or Army Gunnery as a special study, and, having undergone the necessary training, devote themselves entirely to that branch of their profession? Officers who did not specialize in any particular branch, would be available for bombing and fighting duties, and any other normal duties falling to the lot of their service.

Yours faithfully,

D. H. AGNEW,

Captain.

DEAR SIR,—I should like to obtain an authoritative opinion on the subject of infantry Advanced guards to small forces.

What extent of front is it nowadays considered necessary for them to cover?

I am aware that the answer that most readily suggests itself is that this entirely depends on the kind of country through which the Advanced Guard is moving.

This, of course, is quite true, but I do not consider that it closes the question, *e.g.*, in close country the same extent of front can be covered as in open country by using more troops in the Van-Guard:

Let us take an example :—A company detailed as Advanced Guard to a battalion advancing in the vicinity of the enemy may be told off with :—

- (i) One platoon as Van-Guard and three platoons as Main Guard or
- (ii) Two platoons as Van-Guard and two as Main Guard.

I imagine that a smaller Main Guard than two platoons would be considered insufficient.

In the former case it is thought that the Van-Guard platoon could not be expected to cover a front of more than 800 yards in fairly open country (*i.e.*, 400 yds. on each side of the road) without great danger of getting out of control and losing touch. In country at all close this front would have to be considerably reduced.

Now is this enough?

I have heard it argued that it is not, in that hostile Lewis guns situated beyond the flank of the Van-Guard could bring heavy fire to bear on the Main body in column of route before the arrival of the Flank Guard.

I have seen a plan of Advanced Guard for a battalion acting independently that envisaged covering 1,300 yds. on either side of the road, *i.e.*, 2,600 yards in all, in very open country.

The disadvantages of such a system seem to be—

- (i) Absolute lack of manœuvring power.
- (ii) Great difficulty in changing direction whenever the road bent to a flank.
- (iii) Absolute inability to close quickly enough on entering close country to prevent portions of the Van-Guard getting lost.

“INFANTRYMAN.”

[It is considered that the frontage of a Van-Guard platoon envisaged by you, *i.e.*, 400 yards on each side of the road, is quite as much as it could manage and, as you say, would have to be reduced in close country.

It must be remembered that the duties of a Van-Guard are—

- (a) To act as a protective detachment to the Main Guard.
- (b) To supply the Main Guard with information.
- (c) To overcome slight opposition which the Advanced Guard Mounted Troops are unable to brush aside.

Undue extension militates against (a) and (c), and (b) should be mainly carried out by scouts.—EDITOR.]

DEAR SIR,— The subject of the Co-operation of the Army and of the Royal Air Force is one of such importance that it is most desirable to import neither bitterness nor recrimination into its discussion. Into the controversy regarding the treatment accord-

ed the Army Co-operation Squadrons in the Great War and their future prospects we need not enter; it is satisfactory to note that *Adastral* assures us that the personnel of those squadrons will not be touched except under abnormal conditions. Nor need we be led into dispute concerning the assertion that war can possibly be brought to an end by Air action alone. Let us rather concentrate on the heart of the matter. Is it possible or not to advance the control of Artillery fire from the air beyond the point reached in 1918? No great advance has been made in seven years of peace; are we right in assuming that existing methods have reached their maximum of development? If that is so, then new methods must be explored.

Now it seems to me that *Adastral's* reply to Major Cherry is no satisfactory answer because it is based on entirely different premises. The assumptions that form the basis of Major Cherry's argument are two in number :—

- (1) The practical use of Radio-Telephony is imminent.
- (2) The artillery machine of the near future will not require an extensive landing ground nor, he might have added, an aerodrome from which to rise.

Demolish those two assumptions and the whole structure of ideas built upon them falls inevitably to the ground.

But that is not what *Adastral* has done. He remarks first that the control of artillery fire by Radio-telephony is not so imminent as Major Cherry believes. That is not a convincing statement in view of certain remarkable experiments now in progress in the Royal Tank Corps in this country. Whether it is true or not however it is an argument that merely postpones the adoption of Major Cherry's ideas; it does not refute them.

Concerning the second point *Adastral* states that the early advent of the *Auto Giro* will not allow the size of landing grounds being materially diminished in the near future. This is disappointing to the optimistic layman who reads in 'Discovery' (December 1925) that "practical flyers who have seen the machine say that though it may not be theoretically as efficient as the aeroplane it has, to all intents and purposes, solved the problem of almost vertical ascent and landing for low-powered, slow speed machines." Whether *Adastral* or the practical flyers who have seen the machine are correct again does not greatly matter. Provided we may assume that the day

will come when an aeroplane will be able to ascend and descend in proximity to battery positions, we may be permitted to review the possibilities of improved Artillery control such innovations offer us.

Much of Adastral's thesis we must accordingly pass over because it is not based on Major Cherry's premises. It was perhaps in consequence of this that Adastral did not grasp the full import of the new suggestions and that he pointed out on page 72 that it was not sufficient for the pilot to be a mere aerial chauffeur, an irrefutable statement regarding the pilot of the R.A.F. But if I understand Major Cherry aright an aerial chauffeur is exactly the form that he sees his battery commander of the future assuming as he steps, whenever he wishes, into the Aerial Taxi held ready for him, transported, cleaned, tuned up, and maintained by the R.A.F. Some inkling of this revolutionary proposal must have burst on the horrified champion of the Air Force when he thundered forth those devastating questions on page 74. "Does the writer seriously propose to keep three or four aeroplanes sitting inactive on the Aerodrome waiting for the battery personnel to fly?"

I am not aware of Major Cherry's feelings when faced with this question. For myself I must admit that with some inward quaking before the wrath of the expert I feebly but still bravely say "I do;" and the more I think of it the braver I become.

"Who is going to be responsible for these aeroplanes?" There is no hesitation whatever here. "You are—please—the R.A.F."

"What guarantee is there that the landing ground will be reasonably close to the Battery?" As the answers get easier, the nerve of the ignorant soldier becomes steadier. "As much guarantee" I reply "as there is that there will be a ground observation post near the battery, for one thing; and for another, the truth of my assumption about the capabilities of the Auto Giro; and that lies in the womb of the future. But if you are going to argue with me at all you must accept that truth until it is disproved, because I quite admit that it is an indispensable premise."

"Will the Major be willing or able to be away from his Battery for five or six hours during a big battle?"

"Of course he will. He is only in an aerial O.P. instead of a ground one; and it is quite possible the aerial one will be closer to the battery than the ground one."

“What is going to happen about air casualties to battery personnel?” “Just what happens about casualties in any O.P. Who knows? When the day we are discussing comes, every officer may be an aerial chauffeur. It may be the normal means of transport to the Club in the evening.”

In summing up, Adastral accuses Major Cherry of having brewed almost as much mystery broth in his Gunner cauldron as ever came out of the Air Force one. This seems to me to show that Adastral has not grasped the significance of the distinction between observation and control of fire. Existing methods have brought the observation of fire by Air Force personnel to a high pitch on which great advance does not seem possible. The attention of the Artillery is directed accordingly to combining observation and control. But control means the issue of orders; and orders can only be issued by an officer of the unit concerned. This is not mere sentiment nor tradition; it is practical necessity. Therefore an officer of the unit concerned must take the air. Can the Air Force, when Radio-telephony and ready accessibility of an aeroplane to any point reasonably near a battery position are accomplished facts, supply the aerial observation post required and place it unreservedly at the disposal of the Fire Control Officer? That is the root of the matter. .

Yours faithfully,

E. C. ANSTEY

Lt.-Col., R.A.

REVIEWS.

"Disraeli: The Alien Patriot." BY E. T. RAYMOND.
(Hodder and Stoughton, 18s.)

The lives of most of our prominent men have been written from a study of their public action and speeches, with occasional borrowings from their mass of private letters.

The subject of this biography was, however, a man of secrets. As the writer says "we can never be sure of Disraeli in Disraeli's speeches.....nor in his table talk.....nor in his letters."

But the secrets of Disraeli's life are revealed in the characters in his novels and the writer of this book has evidently made a close study of these works.

How this "Jewish adventurer" as he was called, rose from obscurity to be "the most popular man in England," and the one "unquestionable genius of his age among the statesmen of England" makes an interesting study.

Disraeli started life with many disadvantages. He lacked birth. He came of an alien race. His schooling was imperfect and he was always notoriously needy. On the other hand he was undoubtedly a genius, and though he had not the advantage of studying a modern course of mind and memory training we are told that "he entered life with the personal conviction that Benjamin Disraeli must have a career."

His success as a statesman can largely be attributed to the fact that he was not an Englishman. It enabled him to see facts with an outlook the opposite of insular. When he looked on England through the eyes of an intelligent-foreigner he often saw a great deal that was hidden to Englishmen themselves.

Like many distinguished statesmen Disraeli started life as a solicitor's clerk. He was soon released from his legal bondage, and took to journalism and literature. In fact for some time he wavered between a literary and political career. The story of his early years is a story of failure both as a journalist and as a politician, though these failures were counter-balanced to a certain extent by the success of his novels.

It was not until after his fourth attempt that he realised the first of his political ambitions and gained a seat in Parliament.

Starting with no political convictions he threw in his lot with the conservatives, chiefly as he saw no other chance of entering public life. He soon became a Nationalist and was later known as "the Pioneer of Imperialism."

His first years as a member of Parliament will be remembered by his powerful speeches, his bitterness in opposition and as the champion of Protection against Free trade.

From the first he hated Gladstone and always referred to him as the "Arch Villain." The long duel between these two only ended at the death of Disraeli.

Queen Victoria could not stand the sight of "this adventurous Jew." In fact his first ministerial appointment, that of Chancellor of the Exchequer, was selected chiefly because the holder of this appointment was not required at that time to hang about the court and the Queen.

It was not until 1868, "twenty years too late" as Disraeli himself said, that the Queen's old aversion yielded to his cleverness and he was chosen as Prime Minister.

As the writer says "after a life spent in dodging duns it was something to have gained the affection of Queen Victoria."

Though now an old man his years in power are sufficiently memorable.

With Disraeli friendship with France amounted almost to a passion. He always maintained that good understanding with France was "the key and corner stone of modern civilisation."

On the continent his great rival was Bismarck. Disraeli was probably the only man in England who had ever begun to think about the menace of a German Navy, and this was as early as 1848.

He himself brought off the coup of purchasing the Khedive's shares in the Suez Canal, a feat which added enormously to his prestige.

Another of his acts was carried through against much opposition. The Queen had asked previous Prime Ministers to make her an Empress and they had all refused. Beaconsfield, as he had become, presented the Queen with the title of Empress of India.

In whatever else Beaconsfield had failed, he had stirred the national spirit and raised that curious thing called British prestige.

No account of the life of Beaconsfield would be complete without a reference to his last important appearance in the House of Lords when he declared in a memorable phrase that "the keys of India are in London."

Historical Illustrations to Field Service Regulations, Vol. II. BY BT. MAJOR H. G. EADY, M.C., P.S.C., ROYAL ENGINEERS. (Sifton Præd & Co., Ltd., London, 1926, 10s. 6d.)

This book is based entirely on Field Service Regulations, Vol. II, and gives examples from History to illustrate all the principles and precepts laid down in that book.

According to the preface, the object of the book is to help officers to read Military History intelligently and with reference to the manuals. It is not intended as a crammers "potted history" for the purpose of passing examinations.

In actual fact it will probably be used for the latter purpose and will be a great help to Officers studying for the Staff College Examination who may not know how to begin applying the manuals to their study of Military History.

The "List of Reference Books" at the beginning gives a useful list of works on most of the chief campaigns in history.

The Fighting Forces. (Gale and Polden, 5s. quarterly),
December 1925.

We read on the front page of "The Fighting Forces" that it is a quarterly magazine for the Royal Navy, the Army and the Royal Air Force.

We see no reason why its circulation should be confined to the Services.

It consists chiefly of articles of general interest and short stories that one might read in any quarterly, and includes articles on Auction Bridge and Chess.

From a professional point of view, this number contains some interesting comments on the recent home manœuvres. There is another addition to the long list of articles on "A Ministry of Defence." In this the writer comes to the conclusion that the scheme could only meet with success if the man, capable of carrying out the onerous duties, is forthcoming.

An article by Col. J. F. C. Fuller is followed by one entitled "Man, Beast and Machine in War" which is intended to sober up the "Mechanical inebriate."

Oallinicus. BY J. B. S. HALDANE. (Thacker Spink and Co., Simla, 1925, Rs. 2-3.)

This book has already been dealt with at some length in the opening paragraphs of an article entitled "Chemical Warfare" Al Khanzir, in the July 1925 issue of the U. S. I. Journal, and there is little to add to the remarks contained in that article. Professor Haldane makes out a strong case for the advisability of keeping the possible operations of chemical warfare under close study. He appears to be very strongly biassed against the professional soldier as a student of possible future methods of war, and also to consider military men as among the main obstructions in the preparation of the nation for chemical war. He gives no reason which would support this opinion :

The author's ideas are clearly expressed in simple language. The book is worth careful study, and might well be a valuable means of attaining the object set forth for the work—the education of the public in this important matter of the use of gas in wars of the future.

The Pilgrim of Eternity. BYRON—A Conflict. BY JOHN DRINKWATER. (Hodder and Stoughton, 18s., 1925.)

In the words of the author, the purpose of this book is to tell the story of Byron's life seen in relation to his work as directly as possible. The actual description of Byron's travels is very interesting. The book, in general, gives the impression that, behind all that he has written, the author had one main idea, to show that Byron, whatever may have been his morals, was a poet of the highest rank, and was by no means as black as the many previous writers who have discussed him, have painted him. About the merits of his poetic works we do not consider there has ever been any question. We are, however, somewhat doubtful if any good purpose can be served, now, by a further discussion on the rights or wrongs of his mode of living and of episodes in his life. To those who feel that Byron's life needs explanation or defence, this book may be of some interest. We do not think that it will appeal to any large number of the general public.

Simla Past and Present. BY E. J. BUCK. (Times Press, Bombay, Rs. 15, 1926.)

Before the publication of the original edition of "*Simla Past and Present*" very little was known to the general public of the history of the summer seat of the Government of India. That edition, obviously the result of much labour and research on the part of the author, gave the reader a clear and comprehensive account of the development of Simla since its earliest days. In this recent edition, Mr. Buck has brought up to date the chapters of the earlier work, by the addition of much information on the subjects of those chapters, drawn both from his personal knowledge and from papers to which he has only recently had access. Particularly interesting is the chapter on the Hill States of Simla, which gives a short account of the origin of the different states and of their various claims to interest. The Appendix too giving the Shikar Rules for the Simla Hill States and the Simla District, should be valuable to the inhabitants of Simla who wish to indulge in the sport provided by the surrounding forests.

The interest of the book is enhanced by the numerous excellent photographs that have been given, illustrating different houses and places in and around Simla.

This book should be of interest to anyone, giving, as it does, the record of Simla from its inception as merely a refuge from the heat of the plains, to its present important position as the residence of the Governing Body in this country. We can recommend it particularly to all those who find themselves, even for the shortest of periods, in Simla.

Common Mistakes in the Solution of Tactical Problems and How to Avoid Them. BY BT. LIEUT.-COLONEL A. B. BEAUMAN, D.S.O. (Hugh Rees, Ltd., London, 1925. 2s. 6d.)

This little book, which is very quickly read and digested, gives very simply and clearly some common errors in the solution of tactical problems and explains how to avoid them. It was issued in pamphlet form to each student at the Army Headquarters Staff College Course held in Simla last year and should be of great use to officers studying for Promotion or the Staff College.

The ²⁴₁ 2456 JOURNAL of the
UNITED SERVICE INSTITUTION
of INDIA

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United Service Institution of India.

RULES OF MEMBERSHIP.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign, naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

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Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 10, in advance, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 10.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A.E.I., Vol. II, para. 204, and King's Regulations, para. 509.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published. Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the Postage.

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It is to the advantage of an officer to join the Fund on his first tour of service in India, as otherwise, on joining it in a subsequent tour he would have to pay subscriptions for any previous tours in the country as a married officer, since 1st January 1919.

The Fund (late Queen's Military Widows' Fund) was established in 1820, to assist families of British Service (Army) officers dying in India, and mainly to enable them to return Home without delay.

The Fund is controlled by a Committee consisting of and elected by subscribing officers serving at Army Headquarters, Simla.

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The Secretary,
MILITARY WIDOWS' FUND,
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(COX'S AND KING'S BRANCH), SIMLA.

1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed inside front cover.

3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.

4. There is a well-stocked library in the Institution, from which members can obtain books on loan free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V.-P. for the postage.

5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members but ordinary members wishing to have their Journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.

6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found in para. IV, Secretary's Notes.

7. Members are responsible that they keep the Secretary carefully posted with regard to changes of address.

8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months

United Service Institution of India

JULY, 1926.

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I.—New Members.

The following new members joined the Institution from 1st March to 31st May 1926.

Life Member.

Captain A. G. Duncan.

Ordinary Members.

| | |
|---|-----------------------------|
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| Colonel A. H. Moberly. | Major-General T. H. Symons. |
| Major C. B. Herapath. | Captain E. A. Hamlyn. |
| Lieut. R. D. Bolton. | Captain K. L. Bodenham. |
| | Captain H. L. Barstow. |
| | Captain R. M. E. King. |

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library. The following list of books may be found useful for reference by officers studying for Promotion Examinations or entrance to the Staff College.

The lists of books presented and purchased as shown in the current year's Journals should also be consulted¹.

The special periods of military history for future Promotion Examinations are as follows (*vide* I. A. O. 409 and 493 of 1924 and I. A. O. No. 172 of 1925):—

| 1 | 2 | 3 | 4 | 5 |
|------------|----------------------|--|--|---|
| Serial No. | Date of examination. | Campaign set for the first time. | Campaign set for the second time. | Campaign set for the last time |
| 1 | October 1926... | Campaign of the British Army in 1914 in France and Belgium from the outbreak of hostilities up to and including the operations on 9th Sept. 1914. | ... | Operations in Waziristan 1919-20. |
| 2 | April 1927 ... | Campaign of the British Army in Mesopotamia, 1916-17, under General Maude, from his accession to command to his death. Questions may be set on events leading up to the inception of the campaign, and the general conditions under which the Expeditionary force was despatched and reinforced also on the conditions of the country and climate as affecting operations. | Campaign of the British Army in 1914 in France and Belgium. General period from commencement of hostilities to the end of the battle of the Aisne. Special period from 18th August to 31st August (Battle of the Marne). | |
| 3 | October 1927... | ... | Mesopotamia (as given in Serial 2, Column 3). | France 1914 (as given in Serial 2, Column 4). |
| 4 | April 1928 ... | To be notified later. | ... | Mesopotamia (as given in Serial 2, Column 3). |

TANKS.

The following notes re Tanks have been received from the General Staff:—

Information has been received that if the use of Light Tanks is involved in any questions set in forthcoming examinations before the revised editions of Cavalry and Infantry Training (Vol. II) are issued, the necessary data regarding the characteristics and performance of the Tanks will be given with the questions.

The following official information regarding the Light Tank is, however, given below for the benefit of officers working for examinations:—

Armament—One 3-pdr. gun, two Vickers guns, three Hotchkiss guns (one for A/A work and one spare).

Average speed of a company of tanks by day; on a road—7—8 miles per hour.

Average speed of a company of tanks by day; cross-country (good going)—6—7 miles per hour.

Average speed of a company of tanks by night; on a road, with headlights—6 miles per hour.

Average circuit of action (cross-country)—135 miles.

Can cross track 6 feet wide.

Can climb verticle obstacle 3 feet high.

MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL HISTORY OF THE WAR.

Military Operations, France and Belgium, Vol. I (to October, 1914).

Ditto

ditto

Vol. II (to 20th November 1914) (in Press).

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914 (General Maurice, new edition).

1914 (Viscount French).

My War Memories (Ludendorff).

General Headquarters, 1914—16, and its Critical Decisions (Falkenhayn).

The March on Paris, 1914 (Von Kluck).

Ypres, 1914. (An official account) (German General Staff)

Oxford Pamphlets, August 1914. The Coming of the War.
(Spencer Wilkinson).

Oxford Pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military,
Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grobe Krieg: Die Schlacht bei Mons (German General
Staff).

Der Grobe Krieg: Die Schlacht bei Longwy (German General
Staff).

Story of the Fourth Army (Montgomery).

2. The Palestine Campaign.

A.—OFFICIAL ACCOUNTS.

A Brief Record of the Advance of the Egyptian Expeditionary
Force, 1919.

The Australian Imperial Force in Sinai and Palestine (H. S.
Gullett).

The New Zealanders in Sinai and Palestine (Lt.-Col. C. G.
Powles).

Yilderim (Dr. Steuber).

B.—OTHER BOOKS.

Allenby's Final Triumph (W. T. Massey).

How Jerusalem was Won (W. T. Massey).

Outline of the Egyptian and Palestine Campaigns, 1914—18
(Bowman-Manifold).

L'Attaque du Canal de Suez (Douin).

3. The Gallipoli Campaign.

Official Account: Official History of the War, Naval Operations,
Vols. II and III.

Gallipoli Campaign (Outline of Military Operations). By A
Student.

Official Despatches.

The Dardanelles (Callwell).

Experiences of a Dugout (Callwell).

Despatches from the Dardanelles (Ian Hamilton).

The Navy in the Dardanelles Campaign (Wemyss).

The World Crisis (Winston Churchill).

4. *The Russo-Japanese War, 1904, up to and including the battle of Liao-Yang.*

A Staff Officer's Scrapbook (Ian Hamilton).

German Official Account.

Lectures on the Strategy of the Russo-Japanese War (Bird).

Question on the Russo-Japanese War (Brunker).

Official Account: The Russo-Japanese War (Naval and Military), 3 Vols., published by Committee of Imperial Defence.

Outline of the Russo-Japanese War (Ross).

A Study of the Russo-Japanese War (Chasseur).

My Experiences at Nan Shan and Port Arthur (Tretyakow).

Outline History of the Russo-Japanese War, 1904, up to the Battle of Liao-Yang, with Questions and Answers (P. W.)

A short account of the Russo-Japanese War ("Footslogger").

An account of the battle of Liao-Yang (with questions and 10 maps for examination purposes) (Bird).

5. *Organization of Army since 1868*

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue. Vols. I to XI.

Outline of the Development of British Army, by Maj.-Genl. Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

B—FORCES OF THE EMPIRE.

*Notes on the land forces of the British Dominions, Colonies, Protectorates and Mandated Territories, 1925.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, viz., R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

* Particularly recommended by the C.I.G.S. for all officers to read.

6. *Development and Constitution of the British Empire.*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The Government of the British Empire (Jenks, 1923).

The Foundation and Growth of the British Empire (J. A. Williamson, 1918).

The Beginnings of English Overseas Enterprise (Sir C. P. Lucas, 1917).

The British Empire Series. (XII volumes).

The Government of England (L. A. Lowell, 1912).

The Expansion of the British Empire (W. H. Woodward, 1921 and 1924 edition).

Overseas Britain (E. F. Knight, 1907).

The Origin and Growth of the English Colonies and of Their System of Government (H. E. Egerton, 1903).

A Short History of Politics (Jenks, 1900).

The English Constitution (Bagehot, 1909).

The Expansion of England (Sir J. Seely, 1883).

Introduction of the Study of the Law of the Constitution (A. V. Dicey, 1908).

England in the Seven Years' War (Sir J. Corbett, 1907).

Selected Speeches and Documents on British Colonial Policy, 2 Vols. (A. B. Keith, 1918).

B.—BOOKS ON SPECIAL PORTIONS OF THE EMPIRE OR WORLD.

The Rise and Expansion of British Dominions in India (Sir A. C. Lyall, 1894).

A Brief History of the Indian Peoples (Sir W. H. Hunter, 1907).

The Nearer East (Hogarth, 1902).

Modern Egypt (Cromer, 1908).

Egypt and the Army (Elgood, 1924).

- The History of Canada** (W. L. Grant).
Nova Scotia (B. Wilson, 1911).
Report on British North America (Sir C. P. Lucas).
The Union of South Africa (R. H. Brand, 1909).
Short History of Australia (E. Scott.)
History of the Australasian Colonies (Jenks, 1912).
The English in the West Indies (J. A. Froude, 1888).
The Lost Possessions of England (W. F. Lord, 1896).

7. Military Geography.

- Naval and Military Geography of the British Empire** (Dr. Vaughan Cornish, 1916).
Elementary Imperial Military Geography (Capt. D. H. Cole, 1924).
Introduction of Military Geography (Col. E. S. May).
Imperial Defence (Col. E. S. May).
Main Feature of the Japanese and other Pacific Problems.
 (Reprinted from "Morning Post." Sifton Præd.)
Britain and the British Seas (H. J. Makinder, 1907).
Military Geography (Macguire).
Imperial Strategy (Repington).
War and the Empire (H. Foster).
Historical Geography of British Colonies (Dominions), 7 Vols.
 (Sir C. P. Lucas, 1906—17)—

- Vol. 1, Mediterranean.
 Vol. 2, West Indies.
 Vol. 3, West Africa.
 Vol. 4, South Africa.
 Vol. 5, Canada.
 Vol. 6, Australia.
 Vol. 7, India.

- The Influence of Sea Power on History** (A. T. Mahan, 1890).
Historical Geography of the British Empire (Hereford George)
The Mastery of the Pacific (A. R. Colquhoun, 1902).
Frontiers (C. B. Fawcett, 1918).

8. Foreign Armies.

OFFICIAL.

- * Handbook of the United States Army, 1924.
- * Handbook of the Army of the Netherlands, 1922.

9. Tactical.

Common mistakes in the solution of tactical problems and how to avoid them (Lieut.-Colonel A. B. Beauman, 1925).

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 500 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes or ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.* :—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India. Members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

* NOT to be removed from the library.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased, and also a list of books useful to members studying for the Staff College and Promotion Examinations, will be found under Secretary's Notes in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

The catalogue completed to 31st March 1924 is now available. Price Rs. 3-8-0 or postage paid Rs. 3-14-0.

VII.—Gold Medal Prize Essay Competition, 1925-26.

The following essays have been received for the 1925-26 competition :—

1. *Audentes Fortuna Juvat.*
2. *Festina lente.*
3. *Pegasus.*

VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the rate of Rs. 2 per manuscript or type-written page.

IX.—

Books Presented.

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|---------------------------|
| 1. A Short History of the British Army to 1914. (Presented by Constable & Co., London, and the Oxford University Press, Bombay.) | 1924 | E. W. Sheppard. |
| 2. Annual Report of the Smithsonian Institution. (Presented by the Secretary of the Smithsonian Institution, Washington). | 1924 | C. D. Walcott. |
| 3. A Science of Infantry Tactics Simplified. (Presented by William Clowes & Sons, London.) | 1926 | Capt. B. H. Liddell-Hart. |
| 4. Text Book of Topographical Surveying. (Presented by the General Staff, India.) | 1925 | Official. |
| 5. Punjab Administration Report, 1924-1925. (Presented by Superintendent, Government Printing, Lahore.) | 1926 | Official. |
| 6. Peking to Lhasa (Presented by Oxford University Press, Bombay.) | 1925 | Sir Francis Younghusband. |

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|-------------------|
| 7. Report on the Royal Military College, Duntroon, Australia. | 1925 | Francis Heritage. |
| 8. Campaign in Mesopotamia, 1914—1918. Vol. III. (Presented by H. M. Stationery Office, London.) | 1925 | Br. Genl. Moberly |

Books Purchased.

| | | |
|--|------|---------------------|
| 1. History of the 45th Rattray's Sikhs, 1914—1921. | 1925 | R. H. Anderson. |
| 2. Military Organisation and Administration (4th Edition). | 1925 | Maj. W. G. Lindsay. |
| 3. Air Power and War Rights ... | 1925 | J. M. Spaight. |
| 4. The Indian Year Book ... | 1926 | Sir Stanley Reed. |
| 5. The Fight for Everest, 1924 ... | 1925 | Lt.-Col. E. Norton |
| 6. The Story of the 29th Division ... | | Capt. Stair Gillon. |
| 7. Imperial Military Geography, 3rd Edition. | 1925 | D. H. Cole. |
| 8. Les Conditions Geographiques de La Guerre. | 1925 | R. Villate. |
| 9. Notes on the Land Forces of the British Dominions, Colonies, Protectorates, and Mandated Territories. | 1925 | Official. |
| 10. West of the Pacific ... | 1925 | E. Huntington. |
| 11. Senate and the League of Nations | 1925 | H. C. Lodge. |

Books on Order.

| <i>Title.</i> | <i>Author.</i> |
|--|------------------------------|
| 1. Disarmament ... | Professor Baker. |
| 2. Manual of Military Law ... | Official. |
| 3. Military Law made Easy ... | Lt.-Col. S. T. Bann- ing. |
| 4. Winged Warfare ... | General Mitchell |
| 5. Our First Airways ... | ... |
| 6. Skyways ... | Mr. Alan Cobham. |
| 7. The Statesman's Year Book for 1926... | ... |
| 8. False Dawn ... | A. C. Carthill. |

X.—Pamphlets.

The following may be obtained by V.-P. P., plus postage, on application to the Secretary :—

- (a) British and Indian Road Space Tables (separately). As. 12 each.
- (b) Diagram of Ammunition Supply (India). As. 4.
- (d) Home War Establishment Tables (provisional). Re. 1-4-0.

XI.—Schemes.

The schemes in the Institution have been considerably increased and in order to simplify their issue they have been classified and numbered as follows :—

They can all be obtained by V.-P. P. plus postage, on application to the Secretary.

- (A) *Administrative Exercise* (with diagram) ... Rs. 2
 To illustrate the supply system of a Division.
 Suitable for Staff College or promotion.
- (B) *Mountain Warfare* ... Rs. 5 each.
 (i) Three lectures on Mountain Warfare.
 (ii) A scheme complete with Map and Solution.
- (C) *New Staff College Series (1926)* ... Rs. 5 each.
 Each of these schemes is complete with map, solution and reasons. Each scheme contains three situations.
 (i) Approach March.
 Reconnaissance for night attack.
 Orders for night attack.
- (ii) Outposts.
 Defence.
 Action of a Force retiring.
- (iii) Move by M. T.
 Occupation of a defensive position.
 Counter-attack.
- (iv) Tactical Exercise without troops.
 Reconnaissance for attack.
 Attack orders.

(D) *Promotion Series* Rs. 5 each

Each of these schemes is complete with map and solution.

(i) *Outpost.*

Defensive position.

Withdrawal.

(ii) *Tactical Exercise without troops.*

Reconnaissance.

Attack orders.

(iii) *Mountain Warfare.*(iv) *Defence.*

Attack orders.

(v) *Appreciation of the situation.*(E) *Staff College Course Schemes (1926)* ... Complete set Rs. 6.

(Available after 10th August 1926).

A set of three schemes, as given at the A. H. Q. Staff College Course, 1926, complete with map and solutions.

(F) *Copies of the recent (February 1926) Staff College Examination papers are available :—*

Training for War papers (with maps) ... Rs. 3 each.

Other papers Re. 1 „

Efforts are being made to compete with the demands for tactical schemes from officers working for the Staff College and Promotion Examinations by introducing as many new schemes as possible.

It is obviously impossible for the Secretary to undertake the correction of individual solutions, but all the recent schemes include a suggested solution in the form in which it is considered that the paper should have been answered with reasons for the solution given.

Officers are recommended to work all their schemes against time and to get into the habit of the methodical allotment of time to the various questions asked.

XII.—Training Manuals.

The following new Training Manuals have recently been published at Home—

Machine Gun Training, 1925.

Infantry Training, Vol. II.

Field Service Pocket Book.

They will all be reprinted for issue in India but in the meanwhile can be obtained on payment from any of the big book-sellers.

XIII.—“ Backward Boys.”

Staff College courses are again to be held this year at Army Headquarters and in the Commands.

Dates are as follows :—

| | | |
|------------------|-----|------------------------------|
| A. H. Q. | ... | ... 12th July to 6th August, |
| Northern Command | ... | ... 9th August. |
| Southern | „ | ... 24th May |
| Eastern | „ | ... 26th July |
| Western | „ | ... August. |

XIV.—Attendance of officers from India at Courses of Instruction and Manœuvres at Home during their leave.

I. A. O. No. 122 of 1926 announces that—

- (a) A limited number of officers on the Indian Establishment may attend courses of Instruction at Home on application to their Command Headquarters.
- (b) 20 officers may do short periods of attachment to units between May and September and to formations during July and August. Applications to be submitted through Commands.
- (c) Officers may attend manœuvres at Home as spectators on application to the India Office.

In the case of (a) and (b) officers will be eligible for all allowances, in addition to leave pay, admissible in similar circumstances to an officer of the British service on the Home Establishment. In the case of (c) no allowances are admissible.

United Service Institution of India.

Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay.)

- 1872.. ROBERTS, Lieut.-Col. F. S., V.C., C.B., R.A.
 1873.. COLQUHOUN, Capt. J. S., R.A.
 1874.. COLQUHOUN, Capt. J. S., R.A.
 1879.. St. JOHN, Maj. O. B. C., R.E.
 1880.. BARROW, Lieut. E. G., 7th Bengal Infantry.
 1882.. MASON, Lieut. A. H., R.E.
 1883.. COLLEN, Maj. E. H. H., s.c.
 1884.. BARROW, Capt. E. G., 7th Bengal Infantry.
 1887.. YATE, Lieut. A. C., 27th Baluch Infantry.
 1888.. MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., 24th Punjab Infantry (specially awarded
 a silver medal).
 1889.. DUFF, Capt. B., 9th Bengal Infantry.
 1890.. MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.
 1891.. CARDEW, Lieut. F. G., 10th Bengal Lancers.
 1893.. BULLOCK, Maj. G. M., Devonshire Regiment.
 1894.. CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.. NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.
 1896.. BINGLEY, Capt. A. H., 7th Bengal Infantry.
 1897.. NAPIER, Capt. G. S. F., Oxfordshire Light Infantry.
 1898.. MULLALLY, Maj. H., R.E.
 CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a
 silver medal).
 1899.. NEVILLE, Col. J. P. C., s.c.
 1900.. THUILLIER, Capt. H. F., R.E.
 LUBBOCK, Capt. G., R.E. (specially awarded a silver medal).
 1901.. RANKEN, Lieut.-Col. G. P. P., 46th Punjab Infantry.
 1902.. TURNER, Capt. H. H. F., 2nd Bengal Lancers.
 1903.. HAMILTON, Maj. W. G., D.S.O., Norfolk Regiment.
 BOND, Capt. R. F. G., R.E. (specially awarded a silver medal).
 1904.. MACMUNN, Maj. G. F., D.S.O., R.F.A.
 1905.. COCKERILL, Maj. G. K., Royal Warwickshire Regiment.
 1907.. WOOD, Maj. E. G. M., 99th Deccan Infantry.
 1908.. JEUDWINE, Maj. H. S., R.A.
 1909.. MOLYNEUX, Maj. E. M. J., D.S.O., 12th Cavalry.
 ELSMIE, Maj. A. M. S., 56th Rifles, F. F. (specially awarded
 a silver medal).
 1911.. Mr. D. PETRIE, M.A., Punjab Police.
 1912.. CARTER, Maj. B. C., The King's Regiment.
 1913.. THOMSON, Maj. A. G., 58th Vaughan's Rifles (F.F.).
 1914.. BAINBRIDGE, Lieut.-Col. W. F., D.S.O., 51st Sikhs (F.F.).
 NORMAN, Maj. C. L., M.V.O., Q.V.O., Corps of Guides (specially
 awarded a silver medal).
 1915.. No Award.
 1916.. CRUM, Maj. W. E., V.D., Calcutta Light Horse.
 1917.. BLAKER, Maj. W. F., R.F.A.
 1918.. GOMPERTZ, Capt. A. V., M.C., R.E.
 1919.. GOMPERTZ, Capt. M. L. A., 108th Infantry.
 1920.. KEEN, Lt.-Col. F. S., D.S.O., 2/15th Sikhs.
 1921.. No Award.
 1922.. MARTIN, Maj. H. G., D.S.O., O.B.E., R.F.A.
 1923.. KEEN, Colonel F. S., D.S.O., I.A.
 1924.. No award.
 1925.. No Award

MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(a) For officers—British or Indian—silver medal.

(b) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers and soldiers at the date of the Award.)

1889.. BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890.. YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

* *N.B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Indian Auxiliary and Territorial Forces and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

MacGregor Memorial Medalists—(contd.).

- 1891.. SAWYER, Major H. A., 45th Sikhs.
RAMZAN KHAN, Havildar, 3rd Sikhs.
- 1892.. VAUGHAN, Capt. H. B., 7th Bengal Infantry.
JAGGAT SINGH, Havildar, 19th Punjab Infantry.
- 1893.. BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
FAZALDAD KHAN, Dafedar, 17th Bengal Cavalry.
1894. O'SULLIVAN, Major G. H. W., R.E.
MULL SINGH, Sowar, 6th Bengal Cavalry.
- 1895.. DAVIES, Capt. H. R., Oxfordshire Light Infantry.
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
1896. COCKERILL, Lieut. G. K., 28th Punjab Infantry.
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897.. SWAYNE, Capt. F. J. F., 10th Rajput Infantry.
SHAHZAD MIR, Dafedar, 11th Bengal Lancers.
- 1898 WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899.. DOUGLAS, Capt. J. A., 2nd Bengal Lancers.
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900.. WINGATE, Capt. A. W. S., 14th Bengal Lancers.
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901.. BURTON, Maj. E. B., 17th Bengal Lancers.
SUNDAR SINGH, Colour Havildar, 31st Burma Infantry.
- 1902.. RAY, Capt. M. B. E., 7th Rajput Infantry.
TILBIE BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903.. MANIFOLD, Lieut.-Col. C. C., I.M.S.
GHULAM HUSSAIN, Lance-Dafedar, Q. O. Corps of Guides.
- 1904.. FRASER, Capt. L. D., R.E.A.
MOGHAL BAZ, Dafedar, Q. O. Corps of Guides.
- 1905.. HENNICK, Maj. F., 40th Pathans (specially awarded gold medal).
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906.. SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.
GHAFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.
- 1907.. NANGLE, Capt. M. C., 92nd Punjabis.
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908.. GIBBON, Capt. C. M., Royal Irish Fusiliers.
MALANG, Havildar, 56th Punjab Rifles.
- 1909.. MUHAMMAD RAZA, Havildar, 106th Pioneers.

MacGregor Memorial Medalists —(concl'd.).

- 1910.. **SYKES**, Maj. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).
TURNER, Capt. F. G., R.E.
KHAN BAHADUR SHER JUNG, Survey of India.
- 1911.. **LEACHMAN**, Capt. G. E., The Royal Sussex Regiment.
GURMUKH SINGH, Jemadar, 93rd Burma Infantry.
- 1912.. **PRITCHARD**, Capt. P. P. A., 83rd Wallahabad Light Infantry (specially awarded a gold medal).
WILSON, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.
MOHIBULLA, Lance-Dafedar, Q. V. O. Corps of Guides.
- 1913.. **ABBAY**, Capt. B. N., 27th Light Cavalry.
SIEDAR KHAN, Sowar, 39th (K.G.O.) Central India Horse.
WARATONG, Havildar, Burma Military Police (specially awarded a silver medal).
- 1914.. **BAILLY**, Capt. F. M., I.A. (Political Department).
MORSHEAD, Capt. H. T., R.E.
HAIDAR ALI, Naik, 106th Hazara Pioneers.
- 1915.. **WATERFIELD**, Capt. F. C., 45th Rattray's Sikhs.
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916.. **ABDUR RAHMAN**, Naik, 21st Punjabis.
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).
- 1917.. **MIAN AFRAZ GUL**, Sepoy, Khyber Rifles.
- 1918.. **NOEL**, Capt. E. W. C. (Political Department).
- 1919.. **KEELING**, Lt.-Col. E. H., M.C., R.E.
ALLA SA, Jemadar, N.-E. Frontier Corps.
- 1920.. **BLACKER**, Capt. L. V. S., Q. V. O. Corps of Guides.
AWAL NUR, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides (Special gratuity of Rs. 200.)
- 1921.. **HOLT**, Major A. L., Royal Engineers.
SHER ALI, Sepoy No. 4952, 106th Hazara Pioneers.
- 1922.. **ABDUL SAMAD SHAH**, Capt., O.B.E., 31st D. C. O. Lancers.
NUR MUHAMMED, Lance-Naik, 1st Guides Infantry, F. F.
- 1923.. **BRUCE**, Capt. J. G., 2/6th Gurkha Rifles.
SOHBAT, Head Constable, N.-W. F. Police.
HARI SINGH THAPA, Survey Department.
- 1924.. **HAVILDAR RAHMAT SHAH**, N.-W. F. Corps.
NAIK GHULAB HUSSAIN, N.-W. F. Corps.
- 1925.. **SPEAR**, Captain C. B., 5/13th Frontier Force Rifles.
JANBAR KHAN, Naik, 5/13th Frontier Force Rifles.

The Journal

OF THE

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EDITORIAL.

The seriousness of the recent strike movement in England was evident from its commencement and we can be truly thankful that such a grave event passed off without bloodshed and with so little animosity. Mr. Baldwin's speech, making clear that the issue was a constitutional and not merely an industrial one, was really the decisive factor.

The rest of the world awaited expectantly the disorders which seemed bound to occur and there was a general feeling of bewilderment when day succeeded day and the struggle still continued with an orderliness and a good humour which were amazing.

The arrangements for dealing with the general strike were beyond all praise; had not great foresight been shown and detailed arrangements been made beforehand, chaos must have resulted. Whatever harm the strike may have done, and whatever financial loss it may have entailed, it is good to know that the Britisher can still rise to the occasion and is prepared as in 1914 at once to put all personal convenience on one side if the safety of the country is at stake.

The response to the call for volunteers exceeded every expectation; all types and classes turned out to do their utmost in whatever capacity they could be most useful. Perhaps the most important lessons brought out by the strike were the use of wireless both as a news spreading agency and as a means by which the Prime Minister could talk to the people, our gradually increasing independence of railways as a means of transport both

of people and of supplies, and the use of the aeroplane as a means of progression and as a newspaper carrying agency in which it vied with the motor car; it is not until the ordinary methods break down that the more modern inventions are really tested and enabled to prove their worth.

* * * * *

In 1924 a committee was formed under Lord Plumer to advise on the difficult question of the selection of officers for promotion.

As a result of the deliberations of the committee the Secretary of State for War has made an important announcement to the effect that it has been decided that there shall be no change in the present system of normal promotion from second-lieutenant to major and that nothing should be done which would impair in any way the greatest asset the British Army possesses—the regimental *esprit de corps*. As before, in order that outstanding junior officers may have every chance of reaching the highest ranks of the army it has been decided that such officers of marked ability shall receive accelerated promotion.

Promotion above the rank of major is in future to be by rigid selection. Above the rank of lieutenant-colonel selection is to become still more drastic and, in making all promotions, the merit, age and seniority of more junior officers are to be carefully weighed before promotion is given. By this means it is hoped that promotion will be ensured in the best interests of the Service and that officers of proved merit will get an opportunity of rising to the highest ranks.

The question is of considerable interest. There is no doubt that in the British Army, as in the Indian, our greatest asset is regimental *esprit de corps* which, perhaps, reached its height in 1914 and has not yet quite recovered from the casualties and the changes of the war and the post-war reorganisation period. No system of promotion would be sound which would in any way impair this regimental spirit.

It was generally considered, however, that, in the Indian Army, some of our battalion and many of our brigade commanders in 1914 were too old to stand for long the strain of modern war. The young brigade commander was a feature of the British Army in 1918 and did much towards bringing the war to a successful conclusion.

In addition to efficiency and energy, it is generally agreed that experience in a commander is also a necessity. In peace time such experience can only be gained by time and study, in war it is gained more quickly.

A system of promotion conducted entirely on a time scale is destructive of initiative and ambition and a system based entirely on selection is liable to cause discontent and might tend to impair the all-important regimental *esprit de corps*.

The system outlined by the Secretary of State strikes the middle course, and should be to the greatest benefit of the Service as a whole. With the present attention being paid to the training of officers, promotion examinations and confidential reports will ensure the efficiency of the junior officers and will eliminate the professionally unfit.

It is of interest to compare the ages of famous commanders of the 18th and 19th centuries with those of the period immediately prior to the Great War. Marlborough was a Major-General at 35, a Lieutenant-General at 38 and in supreme command of the British forces at home and abroad at 52. Napoleon commanded an army at 27 and was first consul of France at 30.

Wellington was a Lieut.-Colonel at 24 and commanding an army at 35. Whatever the defects of the system of promotion by purchase it brought some fine soldiers to the top.

To take the pre-war period—Sir John French and Lord Haig were Major-Generals at 48 and 43 respectively and the latter was C.-in-C. at 54. Marshal Foch, on the other hand, was not made generalissimo of the Allied Forces until the age of 57. A further comparison with the ages of commanders of to-day is of interest.

* * * * *

Proposals for the co-ordination of the three fighting services under one Minister of Defence have again been put forward in the House of Commons and the Prime Minister has promised to have the subject re-discussed.

It is certainly an urgent necessity that there should be a common strategic doctrine for our fighting services, as naval, military and air strategy are so obviously inter-dependent.

Whether one minister could ever really control and co-ordinate three such important departments is open to question; he certainly could not do so without an adequate combined staff to advise him. The formation of a combined staff of the three services

should be the first step. Even if no Minister of Defence is appointed such a staff is now a necessity. The difficulty will be to find men with the necessary qualifications to form part of this combined staff and still more difficult will it be to find others to instruct them.

* * * * *

The success of the Indian Army hockey team in New Zealand is very gratifying and conclusively proves that the player from India can be as effective on grass grounds, similar to those met with in England, as he is on the fiery pitches of the Punjab.

None of the hockey test matches has as yet been played but the overwhelming victories gained up to the present suggest that New Zealand hockey is not quite on a par with her Rugby football.

However, there are more important aspects to the tour than the actual scoring of goals.

Indian Army hockey is gradually regaining its pre-war standard and the game is gaining popularity also among British units in India and at Home. Now that so few of our Public Schools continue to play association football and it is quite a rare occurrence to find an officer in his regimental football team, hockey has become one of the only games in which officers can play with their men in a British battalion.

During the period immediately following the Great War it was noticeable that very few of the junior officers of the Indian Army turned out to play hockey with their men; they preferred motor bicycles and afternoon dances at the club.

Things are now, however, improving in this respect and the British officer is taking his part.

The feeling of the Indian soldier for his officer is a very personal matter and interest in his games is a sure means for the officer to be able to strengthen this bond.

In the Great War a British battalion could recover from a mauling comparatively quickly and, filled up with fresh officers from Home, could carry on with its fighting efficiency scarcely diminished. In an Indian battalion, however, the loss of two or three of the old officers was a staggering blow which was only slightly relieved by their replacement even by officers of the same seniority and experience.

With our present short service Indian Army greater efforts have to be made by the British officer to get to know his men. Before the War it was generally considered that it took several years for a British officer really to gain the trust and confidence of his men—and this was in the days when the British officer had much more leisure.

* * * * *

By the time this number of the *Journal* is in circulation the result of the first two cricket test matches will be known and no review of current events would be complete without some reference to them.

A very marked feature of the after War period in England has been the recrudescence of sport in every form. Whether this is entirely for the good of the nation or not it is difficult to say as the present tendency seems rather for a very small minority to play and the remainder to look on and bet on the result.

The efforts therefore being made by certain enthusiasts, which include several well-known officers, to improve the facilities for the popular playing of games in and around London are worthy of every support. However the fact remains that, to the majority of British subjects, the first test match at Nottingham will, at the time of writing, be the most important event in the Empire.

Here again, the development of our system of Communication has enabled the Australian cricket enthusiast to follow the fortunes of the game almost as closely as his rival supporter in London.

* * * * *

The Calcutta riots have given the military a surfeit of that most unsought after job duty in aid of the Civil Power.

Armoured cars were found most useful for patrolling the streets and re-inforcing and feeding isolated posts and their mere presence appears to have had a calming effect on the mob.

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The Secretary's notes, in addition to containing a list of members and routine notices connected with the Institution, now contain certain notices such as orders regarding courses and attachments at Home, books recommended for examinations, tactical notes, etc., which it is hoped may be of use to members generally, especially those working for examinations.

As indicated in the last Editorial the schemes in the institution have been considerably increased; a complete list is given in the Secretary's notes.

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Members getting books from the library are reminded that they must be returned within one month. Non-compliance with this rule causes considerable unnecessary correspondence.

INDIA'S PLACE IN THE EMPIRE'S AIR POLICY.

By Squadron Leader E. J. Hodson, R.A.F.

1.—INTRODUCTION.

Mechanical flight was first achieved by the Wright Brothers in North Carolina on the 17th of December 1903, and in 1909 Louis Bleriot flew across the Channel. These happenings were very remote from India, but nevertheless they produced some repercussion and in 1911 an Act was passed regulating the flight of airships over India; airships being a synonymous term implying all forms of mechanical flying devices. The title and certain of the substance of this Act has since been amended (1914) and it is now called the Aircraft Act.

Since this Act was passed flying has made gigantic strides, but it was not until after the last war that flying donned her seven league boots and started striding from England to various parts of the Empire, including India.

During the war the advance of flying more or less passed India by; true she gradually acquired a few aeroplanes and by the end of the war had achieved a small Air Force, but the distance of India from the main theatres of war and from the feverish struggle between the nations made it only natural that this latest offspring of human ingenuity should remain a comparatively unknown factor as regards its potentialities and possibilities.

Since the war flying in India has had a chequered career. Aeroplanes were used in the third Afghan War and in a desultory way on the frontier, but the need for the most urgent financial economy and a lack of the full appreciation of aircraft as a valuable and economical factor in the preservation and maintenance of peace on the frontier led to such drastic curtailment of Air Force needs that it practically ceased to exist as a fighting unit. Happily the inevitable reaction occurred and India, at the cross-ways of aerial oblivion or renaissance, chose the latter and she now possesses a highly efficient, if small, Air Force. The time has come, however, to take stock of her present aerial position, both civil and military, in the light of the present world and

empire aerial situation, and to try to see what her policy should be if she is to keep her place and play her part in the development of empire aviation.

2.—THE WORLD SITUATION AT PRESENT.

In order to appreciate the situation correctly it is necessary to examine the aerial question as a whole, so that we may see the lines on which the general situation is developing. In regard to the military situation since the war, the world, or that part of it which suffered from the results, has been trying to find a formula for the future preservation of a permanent peace. This is an inevitable consequence of any such immense upheaval as is caused by a war of world-wide magnitude, but with the advance of scientific knowledge these efforts towards the attainment of an earthly Paradise have received an additional spur. It is a highly significant fact however, that of all the conferences that have been held to discuss the limitations of armaments, none has so far solved the question of aircraft. The reason for this is not very far to seek; aircraft provide at once an economical and possibly decisive weapon, capable of reaching in one bound, the objects for which an Army or a Navy have to engage in bloody battle. It is further significant that in all conferences on the limitations of armaments, the conferring powers have more or less willingly limited the construction of big fighting units like battleships, but have insisted on being allowed to build comparatively large numbers of small fighting units. What is the reason for this? It cannot be philanthropy or pure bonhomie; rather, it is suggested that it is a realisation of the fact that the advent of small and highly mobile fighting units is gradually tending to immobilise the large and cumbrous units. It is not for a moment suggested that battleships are yet obsolete; that their days are numbered may well prove true however. The whole world tendency in armaments to-day is towards speed and mobility combined with efficient striking power.

Prophecy is at the best a hazardous proceeding, but signs are not wanting which seem to point to a coming world race in aerial armaments; indeed it will be inevitable unless the powers agree to a definite limitation. The British Empire still depends for its existence on the integrity of its sea communications and it must continue to do so while it exists; it cannot, however, be very long before it will need to depend also on the safety of its air communications as well, and a dual instead of a

single responsibility will have to be shouldered. In a military sense therefore, every nation at the present time, is free to develop its air forces to its heart's content and this must inevitably lead to international competition. France is in the fortunate strategical position of being able to strike direct at the capitals of England and Germany and if the geographical situation of the other European capitals and industrial centres be examined, it will be seen that very good grounds for apprehension exist, even though the sky be to all appearances cloudless at the moment.

Nor has the East stood idly by all this time, but, under the guiding hand of one or other of the European competitors, has been slowly developing its military and civil aviation and has thus in its way helped on the spirit of rivalry and competition amongst the world's big air powers of to-day.

At the back of the picture, like a stormy sunset, stands Soviet Russia; a country whose hand is against all who do not share her doctrines; who has so far held severely aloof from all disarmament conferences with a cynical smile and meanwhile busied herself in building up and creating a vast military engine, whose potentialities for destruction are great, reinforced as it is by the potency of modern scientific creations unhampered by any international and artificial restrictions. A country moreover, so vast, that it can stretch its tentacles from Europe to farthest Asia.

All these military preparations are inseparably mixed up with the question of economics. Adequate preparations for war are in themselves a form of national insurance, but no country can afford to hang round its neck a millstone of enormous military expenditure which by its very weight may cripple and break its creator financially. Industries which live on the Government are parasites and it is the object of all Governments to turn these parasitic tendencies into commercial and profitable channels in peace time and so enable them to thrive in a congenial atmosphere until such time as a national emergency demands them. The basis of all military aviation is civil aviation, in that in peace time it is peaceful flying which will keep the factories, without which no military air force can live in war time alive and flourishing. The development of civil aviation has been no less rapid than that of military flying. In vast continents like America and Australia and big countries like Germany, the benefits, both commercial and private, conferred by an efficient air service are immense. Germany, by the Treaty of Versailles

has been forced to devote all her activities into civil channels and she has done so with such good effect that she is to-day unrivalled in her organisation and in the measure of public support given to her air lines. America is in the unique position of possessing civil air lines running without Government subsidies and as commercial propositions. Australia has been quick to recognise the use to her of means of transport which can reach out-of-the-way places and undeveloped tracts of country in a matter of a few hours instead of days or even in some cases weeks, and has laid the foundations of future civil aerial greatness. All the world over, from Brazil to Persia, we see countries developing aerial transport for one purpose or another, but the success of all these undertakings is measured by enthusiasm of the public, without which any efforts must wither and die. The problem is in its elements one of modern education and confidence and we see the two growing side by side.

It is interesting to study for a moment the lines on which such developments have been taking place. In large countries internal communications have been given first consideration, and having attained a sufficient measure of success have been extended to outside regions of potential commercial value. America, by force of geographical circumstances, has concentrated on linking up her eastern and western seabords and having perfected this main artery will extend veins north and south. Germany, being hedged in by restrictions, and also by not being a member of the International Air Convention, has been forced to concentrate internally, though it is likely that she would have done so in any case. She has however, pending her admission to the councils of nations again, interested herself also on building up a predominating influence in foreign countries in all parts of the world, and with a very great measure of success. You will meet her in all parts of South America, in the Baltic, in many parts of Europe and in many odd places east of Suez. One day these sowings are going to yield her a great harvest. France has devoted most of her attention to forming a vital link in trans-European airways and in linking up her colonies on the North and West coast of Africa. Italy has so far featured little in the picture, but signs are not wanting that she is awaking from her post-war slumber. England itself is too small, and her land communications are too efficient already to hold out any hope of success in the establishment of internal airways on anything but a very small scale. She does however, possess a large and widely scattered Empire,

and as has been emphasised already, the life blood of this Empire is good communications. For the maintenance of these communications she has built up a Navy, which if not numerically the largest in the world, can perhaps better be described as the most effective communications defence, in that it possesses great mobility and striking power. This fleet operates from a series of bases set on all the principal lines of communication which it is necessary to protect. Since England and the Empire depend for their existence on quick and sure lines of communication, then they must keep them up-to-date and keep pace with the advances of science. The two newest inventions of science are Wireless and Flying; wireless being an ethereal communication admits of no geographic or artificial barriers or restrictions; aircraft being what may be called an ethereal material communication does not admit of these barriers either, but by reason of the human element is forced to recognise them. Aerial restrictions, though just as irksome as all restrictions usually are, are just as necessary as any frontier limitations; the sea, beyond the three mile radius, is free, but then it has no tangible relations with any countries; the air on the other hand gives the traveller a bird's eye view of the country over which he is travelling and if a camera be used he may get a "close up" as well. International air routes are governed by political and military factors; sea routes by nature. England, who for many years has cherished her "all red" sea routes, is now confronted with the distressing fact that the newest and swiftest form of communications cannot follow an "all red" air route. England can be cut off aerially from all her possessions except perhaps Canada and the West Indies; this is a very significant fact.

3.—THE DEVELOPMENT OF EMPIRE AIR POLICY.

So much has already been written about "Imperial Airways" that it is only with diffidence that one approaches this subject afresh. There are however, two aspects of this problem and it is thought that though they are often treated separately, they should in reality be reviewed together.

The maintenance of Empire sea communications is divided between the Navy and the Merchant service. In peace time the merchant service, under the protecting wing of the Navy, is free to follow its lawful occasions; in war time it can only operate with safety where the Navy can indirectly or directly guard it. This state of affairs provides a very apt simile to the maintenance of civil air or merchant air services, whichever they may be

called, only possibly in a more restricted sense. It seems absurd to think of restrictions in the air where three dimensional movement is normal, and yet, such is the contrariness of life, it is this very freedom which has spelt defeat. In peace time, civil aircraft will be free to fly along certain defined routes and over countries which are signatories to the International Air Convention: movement is therefore more restricted than at sea. Furthermore, any country can refuse at any time and with no particular reason to allow military aircraft of any description to fly over their territory. While it is possible therefore, to reach practically any part of the Empire by sea, without let or hindrance, it is not so in the case of the air. This is a very serious problem. In war time at sea, the routes are still open and though the enemy may try and close them he will be fortunate if he is successful in any great degree as the experience of England in the last war will bear out. In the air, on the other hand, the air routes may be definitely closed at once and impossible of passage; in a moment England may be aerially severed from the rest of the Empire. Military reinforcements can be sent by sea always, with or without risk of enemy interference; not so with aircraft at any time, except by the good will of the countries over which they must fly.

We are faced then with the problem of how to keep the Empire communications up to date with the newest and swiftest of mechanical means, when the capital of this Empire depends on the goodwill of foreign nations for the freedom of movement over certain parts of the routes; when no military aircraft can fly over these sections except as a special favour, and when these seemingly vital links may be severed in a minute at the whim of the country concerned. However friendly the countries, whatever the peace treaties or whatever the alliances, the position is intolerable and England and the Empire can never allow themselves to accept this situation complacently without making an effort to master it. The Empire must be independent of the European corridors as far as military necessity goes; commercial necessity in peace time is another matter altogether, and it is natural that civil air lines should patronise the very routes that are useless in war time. The fact remains however that they will be on sufferance and not like their brothers on the sea, in their dominion.

Empire seaways depend for their integrity on the existence of an efficient Navy: the time is not far distant, if it is not

here already, when Empire airways will depend on the existence of an efficient Air Force. The mailed fist may be an unpleasant weapon, but it nevertheless enforces respect even though it be disguised in kid. We have to-day a series of strong naval bases scattered over the world to safeguard our trade routes and our Empire communications; it would seem that in the not very distant future we shall need a series of strong air bases to safeguard our air trade routes and maintain our Empire air communications. We have cruisers, destroyers, submarines and various other craft continually patrolling the seas; will not the time come when we shall have to provide air cruisers to patrol our air routes? To-day, even in the present state of so-called civilisation, pirates exist on the seas: is there any reason to suppose that they will not exist in the heavens? An aeroplane or airship with a valuable cargo of bullion could easily be forced to land by pirate aircraft in some out-of-the-way spot, and then be looted; protection in the air will be just as important as on the sea or ground.

We can now pass on to the question of where these air bases ought to be in order that they may afford this protection effectively. England being cut off from a great part of the Empire must be a law unto herself. She must be capable of defending herself aerially without reinforcement from outside, since any reinforcements would have to come by sea and would inevitably arrive much too late. But England must be the Empire air factory and therefore be in a good position to maintain herself aerially, while providing the rest of the Empire with their aerial needs—always remembering however, that in war time these supplies will have to come by sea. The first place to which one naturally turns is the Mediterranean, as being a vital link in the Empire chain of quick communications, and the country that naturally springs first to the mind is Egypt. Egypt has been called the Clapham Junction of Imperial airways; one might perhaps qualify this statement by saying that she is the Clapham Junction for Asian and African airways. In any case Egypt is the most obvious place for the location of the first of our bases and she is also the starting point of Imperial Airways in the true meaning of the phrase. The African air line is in the main an all red one and does not need comment; the Asian line, having skirted Palestine, crossed Irak, covered the Persian Gulf, passed through India and Burma, will arrive at Singapore where it will again divide to link up Australia on the one hand and Hong Kong and the Far East on the other.

This line will need protection since it is far more exposed and passes through and close to wild country. Protection, in the form of military air garrisons exists in Palestine, Irak and India, but these garrisons have their hands already full without taking on any further responsibilities. After India the Far East route is completely unprotected and so is the Australian route till we come actually to Australia. We cannot afford to put air garrisons down all over these routes, however desirable it may be, and we have therefore got to have garrisons in convenient centres which can reinforce danger spots as the need arises. For this purpose we must divide the routes into zones and locate one force in each zone. Egypt and the Mediterranean will be the first zone. India the second and Australia the third. The fourth should be Hong Kong.

These considerations have been in the main concerned with civil air routes, although they will equally affect military aircraft. There is however the completely military side of the picture and it has already been shown, it is hoped, that civil and military considerations must be taken together. Aircraft, by reason of their peculiar characteristics, can reinforce a given point, with certain limitations, more quickly than any other military weapon. England being aerially severed as she is from a large part of the Empire, is robbed of the advantages of this modern weapon, both as regards sending and receiving reinforcements by air, and she must depend on the sea in the ordinary way. This is slow and in war may be uncertain, and dependence on it to combat the swiftest of modern weapons would be criminal. England therefore, while she may be the Empire air factory, must ensure that she has ample reserves in suitable parts of the Empire, sufficient to carry on until reinforcements can arrive by sea. We have reached the conclusion therefore, that we must have certain air reserves in suitable parts of the Empire, which can be despatched at short notice to reinforce threatened centres and to maintain the air routes in times of peace. These air bases must moreover be carefully sited for their strategical situation geographically, and for the use which can be made of these reserves in normal times; it would be uneconomical in the extreme to pack a number of squadrons into a small island or country where their peace value and training would be problematical.

It is for this reason that Egypt and India have been suggested. Both are large countries and both can find plenty of

work in peace time for such a garrison as may be deemed necessary. Singapore is in many ways better situated than India for one of these bases, but although a small air garrison may be essential, the location of any larger force would be unsound by reason of the restriction of the area. India and Egypt are both situated favourably from a strategical point of view, being in a position to reinforce possible storm centres such as Palestine, Iraq or Singapore.

It is necessary to look for a moment at India's position in the international air route picture. Civil air routes from Europe will pass either straight across Northern or Central Asia or south through India. To the east of India are French and Dutch colonies; some day the mother countries will want to have air communication with these colonies and the way will lie athwart India. Europe is now a network of airways, which are tending to spread ever farther eastwards. Germany is not yet a member of the International Air Convention, nor is Turkey and for the moment the shortest overland route is barred. Germany, *via* the agency of Junkers, has spread her net far outside her own territory and may be said to monopolise the European routes leading to India. The time is not far distant when she will try to link up, not only with India, but across her. India is a vital link not only in Imperial Airways but in International Airways from Europe to the East.

India's future in the air is of vital importance to the Empire from both a civil and military point of view. She still holds out a tempting bait to the Empire's most insidious enemy—Soviet Russia—and a bait moreover that has become, thanks to modern mechanical inventions, more tempting still by reason of its added accessibility. India is now faced with a far more real Russian menace than ever before; a menace too which is capable of developing into an accomplished fact with all the swiftness and suddenness of three dimensional movement. For her own protection and also for that of a vital part of the Empire's, she must maintain an air force strong enough to meet and defeat this menace on her own, should it arise, or better still an air force so strong that it will deter all thoughts of aggression. India lies in a most important strategical position in regard to Empire airways and their protection, in regard to Empire aerial defence and in regard to civil international airways to the East. The time may not be very far distant when it will be necessary to maintain a reserve of squadrons in India to meet possible eventu-

alities in the East. India will become to the Air Force what Colombo is to the Navy in the East Indies station. India is herself a vast country with many possibilities for internal air lines; as far as civil aviation is concerned she is virgin soil to-day and may bear a very fruitful crop to the adventurer who first tills her ground. India must take care however, that it is not a foreign adventurer and an alien country who reaps this harvest. India has a great future before her in the air and with the advance of the science of aviation her value to the Empire will be ever increasing.

THE BATTLE OF KURNA (QURNĀ).

31st May and 1st June, 1915.

A COMBINED NAVAL AND MILITARY OPERATION.

(The narrative is based on the War Diaries, the British Official Account, My Campaign in Mesopotamia, Major-General Sir C. V. F. Townshend, Mesopotamia, 1914-1915, Captain H. Birch-Reynardson, and information that was obtained from officers who were present at the action.)

*By Major-General Sir W. D. Bird, K.B.E., C.B., O.M.G.,
D.S.O.*

The operations of the 6th Indian Division, which began the campaign in Mesopotamia early in November, 1914, were at first carried on with unbroken success. The almost inevitable reaction then took place, the Turks recovered from their surprise and sent large reinforcements to the country, the British, for various reasons, hesitated to do so, and when, at last, reinforcements were despatched, and Sir John Nixon, the new commander-in-chief, arrived at Basra on the 9th April, 1915, he found a situation that was grave, if not actually precarious. The floods caused by the melting of the snow in the highlands where both Euphrates and Tigris commence their courses were in full swing, Kurna, held by a British detachment of 2,500 fighting men, had become an island, flood water was barely kept out of Basra itself by the efforts of its garrison of 7,000 and of much local labour, the 7,000 fighting men in the outpost of Shaiba were surrounded on two sides by water, and the rush of the current was so great in the Karun that steamers could not easily reach the 3,800 British troops that were standing near Ahwaz in the Persian province of Arabistan. Twelve thousand Turco-Arab troops, with perhaps 8,000 Arab auxiliaries, were moving slowly on Shaiba from the west, there were about 8,000 Turco-Arabs in Arabistan, who might if successful be joined by from 10,000 to 15,000 Arabs, and 2,000 Turks, assisted by the same number of Arabs, were watching our troops at Kurna. (Map 1.)

A complete victory at Shaiba on the 14th April not only threw back the Turkish force that had advanced from the west,

but gave the initiative to the British; who from their central position round Basra, were now free either to pursue the defeated group, which was at Nasiriya or to attack the others which were to the north of Kurna and in Arabistan. After weighing the various arguments for and against each alternative, and duly considering the all-important factors of position numbers, quality and transportation, Sir John Nixon decided first to drive the enemy from Arabistan, and placed a force of about 9,000 fighting men, with 23 guns, (the 12th Indian Division) under Major-General G. F. Gorringe for this purpose. At the same time Major-General C. V. F. Townshend, who had just assumed command of the 6th Division, was sent to Kurna to study the question whether it was practicable to attack the Turco-Arabs who were in position there. (For distribution of force in Mesopotamia, see Appendix.)

On reaching Kurna on the 24th April General Townshend was confronted by a situation that was rare, if not actually unprecedented, even in the various annals of the British army; for the little garrison of 2,500 fighting men, with 4 guns, had only been able to prevent Kurna, and the bridgehead* on the left bank of the Tigris, from being engulfed by the surrounding floods both by unceasing work on dykes and dams, and by the employment of two centrifugal pumps for the removal of the water that continually filtered into the place through the soil. It is said, indeed, that, within the bounds of the enclosure and its causeway, which had been built both as a protection and means of movement round Kurna, there "lay an expanse of horrid bog, which gradually became a stagnant lake, forming a lagoon within the perimeter and causeway; and on the scarcely solid core of this lagoon, surrounded by stagnant water and moated by many ditches we sat (in huts of reeds) for three months, while the waters rose round us and heat increased and mosquitoes multiplied" (Map 2.).

From an observation tower 90 feet in height, which had been built by the Sappers far above the highest of the palm trees that surround the place, only an endless expanse of sedge and reed covered marsh was visible, extending to the horizon on every side; and out of this a few small hills stood like little islands, while here and there groups of half submerged palms helped

*There was a bridge of boats, protected by a couple of booms against floating mines etc., across the Tigris at Kurna.

to mark the courses of the great rivers * and their canals. The average depth of the flood water was perhaps not more than three feet ; but the canals and smaller channels for irrigation that intersected the whole area, were, in many cases, at least ten feet deep and twenty feet wide or more ; and they would absolutely have prevented an advance from Kurna by wading had not the from four to eight feet growth of grass and reed and the muddy bottom rendered this almost impracticable except for short distances. Open water, indeed, was only to be found in the stream of the rivers and canals, in a few pools or clearings, or along the narrow, winding tracks, that had been worn in the beds of reeds by the native boatmen ; but there were relatively few reeds for a distance of half a mile on either side of the Tigris, and elsewhere a passage could, in most cases, be forced through the denser growth of reeds and grass for a bellum (punt) by dint of hard poling or paddling. The reeds, however, were not merely an obstruction, since at 500 or 600 yards distance the presence of a bellum in them could not easily be distinguished ; but, apart from this, the marshes afforded no cover either from view or fire.

It was now believed that the main position held by the Turks was astride of the crescent of sandhills that extended from the few ruined huts of the hamlet of Abu Ahran, lying 6 miles to the north of Kurna, for a distance of $3\frac{1}{2}$ miles to Muzaibila ; and this position, it was thought, was occupied by 5 or 6 battalions composed principally of Arab rank and file officered by Turks, that is from 2,000 to 3,000 fighting men, with eight guns, while Ruta, Muzaibila and Sakrikiya, were also held by the enemy. In accordance with what had apparently been their policy of menacing the British in other localities prior to the attack on Shaiba, and perhaps also with the object of preventing the establishment of British artillery within effective range of Abu Ahran Hill, the Turks had occupied a series of posts in advance of this position ; and the most southerly of these, known to us as Norfolk Hill was not more than 4,000 yards from Kurna, and less than 2,000 yards from the British outpost of Fort Snipe. About a mile to the north-east of Norfolk Hill, and flanking it, was the sand spit that had been christened One Tree Hill. One Tower Hill lay immediately to the south of the Barbukh creek,

* Between Kurna and Amara the Tigris is from 250 to 300 yards wide, except in the stretch between Ezra's Tomb and Kala Salih where the width is only from 30 to 70 yards. The depth of the river when in flood is from 13 to 20 feet.

one mile to the north of Norfolk Hill and 1,000 yards from One Tree Hill; and about a mile to the north-west of One Tower Hill was Gun Hill, which also flanked Norfolk Hill at a range of 3,500 yards. Finally from Abu Ahran support could be given to troops on Gun Hill at a range of 5,000 yards, and to men on One Tree Hill at about 6,000 yards. It was known that these advanced posts were garrisoned and entrenched, and it was thought that there were one or more guns on Gun Hill, and one gun on One Tower Hill. It was also believed that the Tigris had been mined in the reach between Kurna and Ruta, that at Ruta the fairway had been obstructed by the sinking of two or three barges, and that the narrow Shwaiyib had also been mined.

The problem that had been set to General Townshend was so far novel in character that the actions of his troops were necessarily to be confined to one definite locality, since the Tigris, or area near it, was both the sole line of advance and communication for the British; whereas a commander who proposes to force the passages of a wide river, or to land on the enemy's coastline, which in effect Townshend was asked to achieve, is generally to some extent free to select the point or points considered most favourable for the achievement of his purpose, and can therefore lower the risks that evidently surround troops who come under fire when in flimsy boats, or as they slowly wade from them to shore. On the other hand the difficulties themselves provided some hope of success, for it might not unreasonably be anticipated that the enemy would in consequence be careless in defence, especially since the Turks apparently thought that it was impracticable to attack the positions of the British, and had made no attempt to do so. The fact that the reinforcement, by men in boats, of the troops holding the little islands would be difficult when under heavy fire, and their withdrawal almost impracticable, might also tend to lessen the resistance that would be offered to a rapid and resolute advance by the Turco-Arabs, who moreover had not shown themselves capable of fighting to the bitter end in the actions that had already taken place in Mesopotamia. Further, although the garrisons of the various islands could mutually support one another with gun fire, a fact that might hinder their envelopment, this advantage was somewhat discounted both by the intervening distances and by the concealment that would be afforded to the attacking troops by the sedges. And the areas of the advanced positions were so restricted that men holding them, even if well entrenched, would, like the crews

of ships at anchor, suffer heavy losses from the concentrated and superior fire that the British could bring to bear. It might therefore be hoped that the British would be able to defeat the enemy in detail, and that, if the advanced posts could be captured quickly, the garrisons of the main positions would leave them after seeing what had happened; for the only line of retreat from these positions was by water, and, unless there were good reasons to believe that the British could be kept away from them, it was probable that, if held to the last, their evacuation would be carried out under the fire of superior naval forces and in this case the Turks would both lose their shipping and be stranded.

It seems, that, before leaving Basra, General Townshend advocated an advance by the force under General Gorringe from Arabistan in combination with a direct attack on the Turkish troops facing the British at Kurna; that is to say, from the accounts he had heard of the situation, he had already half fallen in with what seems to have been the prevalent opinion; that to make a direct attack successfully on the enemy's positions to the north of Kurna was not practicable. When he reached Kurna Townshend, however, first went in the Naval sloop *Odiu* for 4 or 5 miles up the Tigris, and then for some distance along the *Al Huwair*. He also learnt from the commander of the troops at Kurna, Brigadier-General W. H. Dobbie, that to sail far up the *Shwaiyib* was probably not practicable. After ordering General Dobbie to ascertain whether it was possible to wade from *Muzaira'a* to the Sandhills Townshend returned to Basra on the 26th; and, so difficult is it to alter opinion when the mind has been bent in a certain direction, he made a report on the next day to the effect that, since the enemy's positions to the north of Kurna could not be turned in the tactical sense, an advance from Arabistan should be made so as to cause the Turks to loosen their grip on these positions.

But, General Gorringe's operations had only just begun, and there was the political question whether the British could use Persian territory as advanced base for an offensive, and perhaps there was in addition a doubt whether insuperable difficulty would not be experienced in maintaining the 12th Division. The proposal, therefore, was shelved. It seems also that Sir John Nixon had, a fortnight earlier, come to the conclusion that a successful attack could be made on the Turkish positions from bellums, in the management of which 200 men had been trained in each of the three infantry battalions quartered in Kurna;

and, on the 27th April, Townshend was, therefore, asked to consider and develop this idea. As a result it was decided at any rate to provide 80 bellums for each battalion, in 32 of which Machine-gun shields were to be fixed across the bows; and arrangements were also made to build rafts on which mountain guns and machine guns could be mounted.

Some time necessarily was taken in these preparations, and, such was the shortage of shipping that, in any case, the direct attack, if finally approved, could not be commenced until the river steamers that were being used for the maintenance of Gorrings column were available to supply and transport the troops that would be placed under Townshend. In the interval reconnaissance from Kurna was continued, another being made by the small sternwheeler Shushan, on the 9th May, up the Al Huwair; but the British met with such strong resistance from the Arabs who were concealed in the dense beds of reeds bordering a channel not more than 12 feet wide, that great hopes could not be entertained of making a successful movement from this direction. And it was ascertained that although troops could advance slowly from Muzaira, an attack along the left bank of the Tigris would involve the passage both of the Ruta creek and the Tigris under close fire from the enemy's main position.

On the 11th May General Gorrings had so far succeeded in clearing the Turks from Arabistan that Sir John Nixon felt justified in making a decision in regard to the operations at Kurna, and he now directed General Townshend not only to drive the Turks, who were under the command of Halim Bey, from their positions and capture their guns, but also to occupy Amara,* "the operations to be continuous. The troops about 7,000 and ships that were to be employed were enumerated†; the bulk of the 18th Infantry Brigade of the 6th Division being, however, withheld on the ground that the units were required for duty at Basra and its neighbourhood, but it is also possible that shipping could not readily be made available for its movement; suggestions were made as to the form in which the orders for the operation were to be issued; and an indication was given in regard to the localities where posts on the line of communication to Amara could best be placed by Townshend, on whom this responsibility was to devolve.

* Amara is 86 miles by river from Kurna.

† See next page,

The principles that are stated in the Field Service Regulations are necessarily set forth for guidance only, and circumstances may require that other methods should be adopted. It must, however, be said that, in this case, and even although General Townshend's original mentality may have inclined him to disregard rather than to follow regulation, there does not appear to be a sufficiently strong reason to justify Sir John Nixon in neglecting publicly the instruction in the Field Service Regulations that: "an operation order should contain just what the recipient requires to know and nothing more. It should tell him nothing which he can and should arrange for himself." On the other hand the smallness of Nixon's force, and the inadequacy of its land and river transport, probably made it essential that his striking group should form its own communications, in preference to the more usual method under which this responsibility rested with the Inspector-General of Communications.

Next day Townshend submitted a memorandum in which the situation was reviewed at length. After rejecting the alternative of a tactical movement to turn the enemy's position by advancing to the west of the Tigris, owing both to the difficulty of forcing a way through the reeds bordering on the Al Huwair, and the flooded creeks that must also be crossed; and a similar operation on the left bank of the river, as this would involve the passage of deep and open water when under effective fire both in the Ruta creek and in the Tigris, and further did not menace the enemy's line of retreat; he proposed to make a frontal attack in boats against the Turkish centre, and to assist the troops that would deliver this attack by a subsidiary movement that was to be executed by a small force advancing in boats along the left bank of the Tigris. The enemy's forward positions would first be carried and the Tigris up to them swept clear of mines, next Abu Ahran would be assaulted, and finally there would be a vigorous pursuit. General Townshend, then, with some prompting from the commander-in-chief, intended not to yield to the difficulties but to make them serve his projects; and he apparently hoped to surprise the enemy by attacking from the direction in which the strongest military opposition would be encountered.

This plan was approved by Nixon, and a procedure was in consequence initiated in Mesopotamia that seems however, to have been adopted everywhere from the War Cabinet downwards, namely, that the superior authority was to exercise a large

measure of control as regards details for which the subordinate should be responsible.* For it is, of course, obvious that a superior authority that claims to exercise the right widely to supervise the particulars of a project can hardly fail to deal a blow to the self-reliance of the executive officer, and that, in consequence, the chances of success will be injured not improved. The subordinate, further, is tied to the particular plan that has been approved, which cannot so readily be varied to meet the changing circumstances as would be the case had he been given a free hand ; and the fact that the superior authority interferes in regard to details may also be prejudicial to its proper duty of handling the larger questions. On the other hand the final responsibility must and does rest with the superior authority, so that it is, and will always be, extremely difficult to decide where one responsibility can properly begin and the other end. †

Sanction having been given for the execution of his proposals, steps were at once taken by General Townshend to push on preparations for the attack. And, in addition to procuring and equipping the large number of bellums and other vessels required for the offensive, horseboats and barges were fitted for the reception of heavy guns, mahailas (large barges) prepared for the carriage of big stores and for the removal of wounded, and the river steamers Medjidieh, Malamir and Blossie Lynch, which were to be used to support the attack, were, when they returned from the Karun, provided with platforms from which field guns could be fired, if necessary. The troops also were practised constantly in the novel duty of making an attack in and from boats.

General Townshend did not exercise constant supervision over all this business, but, during the period of preparation, and with the specific purpose of misleading the Turks, wisely retained his headquarters at Basra, where most of the work of construction was in hand. And, for the same reason, he did not propose to concentrate his force until the last moment ; for, so long as activity was maintained by the small group of vessels that was blockading the Euphrates, ‡ the enemy could not be certain whether the preparations betokened an attack on Abu Ahran

* Field Service Regulations, Vol. II, Section 189 (4).

† Field Service Regulations, Vol. II, Section 5.

‡ The force comprised two small sternwheelers, the *Shushan* and *Muzaffari*, both armed with pompoms, while the first had also 2 Naval 3 pounders ; the tug *Sumana* towing a barge in which there were two 4 inch guns ; and a motor boat, and, besides Naval personnel, there was a detachment of the 4th Hampshire on board the vessels.

or an advance against the group at Nasiriya. The troops at Kurna, as if more serious business were not in contemplation, also took part, and on one occasion in their bellums, in punitive attacks on neighbouring marshland villages, whose inhabitants had been guilty of raiding mahailas sailing with supplies from Basra, or of laying mines. The Turks meanwhile contented themselves with outrenching; although at times a few rounds were fired by the guns on both sides, Norfolk Hill and Fort Snipe generally exchanged some rifle fire daily, and Arab sharpshooters fired from their boats into Kurna on most nights.

On the 11th May the 119th, the 4th battalion of the 17th Infantry Brigade, were moved from Basra to Kurna. Next day Sir John Nixon, with Townshend, visited Kurna, and, on the 13th, no doubt with the object of heartening the troops of the 17th Brigade to whom chances of earning distinction had not recently fallen, and also perhaps to lend the whole weight of his authority to what seems to have been regarded as a desperate venture by the officers and men, he took the somewhat equivocal step of informing them that an advance was about to be undertaken to Amara. It is certainly not easy to draw the line justly between reticence and communicativeness in time of war. On the one hand if the troops are not taken to some extent into the councils of the commander their hearty co-operation will not be secured, and men who are doubtful of success are already half beaten. On the other hand a commander who publishes his intentions long before the event can hardly expect them not to come to the knowledge of the enemy, and must, in consequence, be prepared to forego the decisive advantage of being able to inflict a surprise. Sir John certainly accepted this risk,* and probably he was justified in doing so, for a victory can be won without surprise, but none can be gained without confidence.

In view of the rapid success that was being achieved by General Gorrington it had become obvious that General Townshend should if he were to strike at all, deliver the blow before the Turkish troops that were retiring from Arabistan through Baisaitin could reach Amara, whence they could easily be brought down to Kurna. Some discussion, however, took place in regard to the possibility of completing the preparations in time to do this. In addition Towashend, who seems again to have been influenced by the doubts of the Naval and Military officers at Kurna as to

* It is stated in the Official Account that, "the defensive line (at Kurna) was unduly extensive for the size of the garrison and, owing to Arab traffic, (this made).....enemy espionage easy."

the practicability of the attack, suggested that the advance should be postponed until the floods had dried up, that is for a month or more. In the end the 31st May was fixed as the date for the attack, and Gorringe was ordered meanwhile to make demonstrations towards Umm Chir until the 26th May, in order to prevent the Turks from detaching troops from Amara to Kurna. It was now also decided that arrangements should be made by Sir John Nixon for a series of demonstrations, during the battle on the Al Huwair by friendly Arabs, who were to be supported by the sternwheelers Shushan and Muzaffari; and on the Shwaiyib by the yacht Comet and a tug that would tow a horseboat containing a 4·7 inch gun. The orders that had been drafted by General Townshend for the attack were, in addition, reviewed by the Commander-in-Chief, who suggested certain amendments.

While these discussions and preparations were going on the troops at Kurna continued their training in spite of the great heat, the thermometer registering as much as 110° in an atmosphere that was saturated with moisture. General Townshend also made great efforts to secure the return to their units of men who had been detached; for, owing to sickness, battalions and batteries had now fallen sadly below the numbers laid down in their war establishments. On the 25th May Townshend moved his headquarters to Kurna, and, on the next day, he explained his plans and issued a memorandum on them to the commanders of the units that were to undertake the attack of the advanced positions. The allotment of bellums was made on the 26th, a total of 372 being distributed among the troops. Of these the battalions of the 17th Brigade received 96 shielded and 200 unshielded bellums, besides 12 rafts for machine guns; the 30th Mountain Battery, which had recently been brought up from Basra, obtained 11 unshielded bellums in addition to those that were used as floats for the gun-rafts; an ambulance was given 12 rafts and 16 bellums, and so on. In the case of the infantry the crew of a fighting bellum was to comprise one non-commissioned officer and nine men; and on board there were to be rations for one day, as well as two sandbags, a water-proof sheet, and a reserve of small arms ammunition of 125 rounds per man, 175 rounds being also carried on the person. The bellums for the supplies of a battalion were to carry the field service kits, water, cooking pots, etc.; and the remainder of the kits of the men, and also rations for seven days, were to be stored in the river steamers and in Mahailas.

The 117th Mahrattas, of the 16th Brigade, who were to form the garrison of Kurna, had already reached it before the 28th May, when the other troops from Basra who had been detailed to take part in the advance began to steam up the Shatt-al-Arab. Of these troops the headquarters of the 16th Infantry Brigade, with the Dorsets, one section of the 63rd Field Battery, the Brigade Signal Section, and a section of British Field Ambulance, were in the river steamer *Medjidieh*; the 104th Rifles, one section of the 63rd Field Battery, a Searchlight Section, and two sections of an Indian Field Ambulance in the *Blosse Lynch*; three companies of the 48th Pioneers, and one section of the 63rd Field Battery, in the steamer *P. 1*; the Norfolk Battalion, and one section of a British Field Ambulance in *P. 3.*; and *P. 4* was used as a Hospital Ship. And the steamers had all anchored by 3 A.M. on the 29th/30th May off Muzaira'a, where they would be to some extent concealed from the enemy by the palm trees.

The fighting force at Townshend's disposal now consisted of the 17th Infantry Brigade, under Lieutenant-Colonel S. H. Climo, its former commander Brigadier-General Dobbie having been invalided; the 16th Infantry Brigade, under Major-General W. S. Delamain; the 2nd Battalion, the Norfolk Regiment from the 18th Infantry Brigade, the 48th Pioneers (less one Company), the 63rd Field Battery, the 1/5th Hampshire Howitzer Battery, the 86th Heavy Battery, the 104th Heavy Battery, the 30th Mountain Battery, the 22nd Company of Sappers and Miners, the Sirmur Sappers and Miners, and the greater part of the 34th Divisional Signal Company; a total of 25 Military guns, including one spare 18-pounder in a barge, and some 7,000 fighting men, of whom 2,560 were in the 17th Brigade. The Naval flotilla, under Captain W. Nunn, that was co-operating with the land forces, comprised the sloops *Espiègle*, *Odin* and *Clio*, the wooden Indian Marine steamer *Lawrence*, the tugs *Shaitan* and *Sumana*, the small river steamers *Miner* and *Lewis Pelly*, the launch *Bahran*, some motor boats, and three horseboats each carrying one 4·7 inch gun; the gun power amounting to some 25 fairly heavy guns and 17 others.

On the evening of the 28th May a dress rehearsal was carried out by the 17th Brigade, a boat parade taking place of the troops that were to use bellums in the attack and some manœuvres being successfully carried out. At 6 P.M., when the parade had ended General Townshend issued the orders for the operation. In these it was stated that, according to the information that had been obtained by our service of intelligence, the Turkish forces at and

near Abu Ahran now comprised five battalions, nine guns, and 600 Mujahidin (volunteer) Arab riflemen, and that these troops were supported by the gunboat Marmariss. There were also about 1,200 armed Arab tribesmen, with one gun, in the marshes to the west of Norfolk Hill, and so placed that they could attack our infantry as the men advanced up the right bank of the Tigris. Of the nine guns four had newly arrived and had not been located exactly; but it was thought that one was at Ruta, and three on Abu Ahran Hill. Of the others there were two on Gun Hill, one at One Tower Hill, one at Abu Ahran, and one at Ruta. General Townshend then stated that, in the first phase of the operations, the enemy were to be subjected on the 31st May to a combined frontal, decisive, attack, and a turning attack, both of which were to be carried out by an advanced guard in boats. At the same time, in order to engage the attention of the Arab tribesmen, demonstrations would be made under instructions that would be issued by the Commander-in-Chief, by friendly Arabs, supported by gunboats, in the Al Huwair and Shwaiyib. The frontal attack, the distinguishing marks of which would be red flags shown above the rushes, would be confided to the 17th Infantry Brigade (with two machine guns per battalion and four in addition for the brigade), less the 22nd Punjabis, but with two sections of the 30th Mountain Battery, half of the Sirmur Sappers and Miners, and two sections of Field Ambulances. These troops should advance in bellums and on rafts, at 6 A.M., against Norfolk Hill. One Tower Hill, and Gun Hill, after a bombardment of one hour's duration by the military guns; these were to be organised in two groups, a Land Section, and a River Section* both distinguished by blue flags; and with the latter were to be half of the 22nd Sappers and Miners, and the Bridging Train. In addition this attack was to be supported by the fire of the Naval flotilla under Captain Nunn. The turning attack was to be made by a group, in bellums and on rafts, consisting of the 22nd Punjabis, one section of the 30th Mountain Battery, half of the Sirmur Sappers and Miners, and one section of an Indian Field Ambulance; and these troops were to meet, north of Muzaira'a at 1 A.M., on the 31st and then advance on One Tree Hill; their movements after daylight being regulated by the progress of the bombardment on by our artillery

* The Land Section comprised two 5 inch guns of the 88th, and two 4 inch guns of the 104th Battery, which were already in position at Kurna, as well as the 1/5th Hampshire 5 inch Howitzer Battery, which was to the north of Nuhairat; and the River Section was to consist of the 4 remaining guns of the 2 Heavy Batteries, which had been mounted in pairs in barges, and of 1 spare 18-pounder gun also in a barge.

a portion of which was to fire on One Tree Hill. Mine sweeping was to be carried on during the bombardment, and the operations of the war vessels were to be governed by the progress of the mine sweepers. A 16th Brigade Group, with green flags, and comprising the 2nd Dorsets, the 104th, three companies of the 48th, the 63rd Field Battery, half of the 22nd Sappers and Miners, and the necessary Ambulance units, and a Reserve group, with yellow flags, consisting of the 2nd Norfolks, a "Wreck" party of Engineers, one section of a British and one section of an Indian Field Ambulance, were to remain in the steamers; and there would be a fourth group comprising the Ordnance barge, the Hospital ship P. 4., and the Engineer Park; and a fifth group of Supply vessels. In addition the duty of securing Kurna from attack by Arabs was entrusted to the 117th.

There is little to criticise in the dispositions that had been made by General Townshend, who had allotted the men and material under his orders to the best advantage. The nature of the enemy's positions, and the obstacles, mines, barges, etc., which had been placed in the Tigris by the Turks, necessitated the most careful preparation, followed, as he proposed, by deliberate and methodical action. An adequate and mobile reserve was retained under the hands of the commander to be employed according to circumstances, and this reserve was in ships which alone could undertake pursuit; and as success would largely depend on superiority of artillery fire, effective support of this kind was provided for the force that was to attack. It seems, nevertheless, that both Townshend and Nun were anxious as to the effect that might be produced in a river where movement was necessarily restricted on the old sloops, steamers, and horseboats and barges, which carried a large proportion of the British guns, by the field artillery of the Turks; and also as to the influence that might be exercised by mines. And this shows how serious an obstacle a mine field is when swept by the enemy's gun fire, and how very great are, and must always be, the advantages possessed by guns on land over those afloat, since a lucky shot from one of the former may sink a ship containing many of the latter.

The excellence of orders issued for a battle is generally relative to the brevity and clearness with which the method of attaining the object of the attack, or defence, is defined, and, in view of the intricacy of the operation, the orders issued by General Townshend seem to have been as short as possible. It may, however, be pointed out that little advantage could be secured

by reference to a frontal, decisive, attack, and a turning attack, although the use of these discriminating terms might easily be harmful. A commander, for instance, can never be certain before the event of the locality where the decision may be gained. And, if so, even the temporary failure of an operation, which has emphatically been labelled as decisive, may, by prematurely discouraging the troops, who will be aware that the decisive effort has miscarried, involve a serious reverse before the battle has been definitely fought out. It is surely wiser, therefore, to employ cautious not expressive words in orders for operations.

On receiving his orders Colonel Climo divided the 2,625 troops that had been placed under his command into two main groups, called the right and left attacks. The former was entrusted to the Oxfordshire and Buckinghamshire Light Infantry, with a party of Sirmur Sappers and Miners, who were first to capture Norfolk Hill, and then One Tower Hill, with close support from the four mountain guns and the machine guns; the Sappers and Miners searching for mines and telephone wires as soon as the hills had been taken. The left attack was to be made on the eastern portion of Gun Hill by the 103rd Mahrattas and a party of Sirmur Sappers and Miners, and was also to be assisted by the mountain and machine guns. The 119th Infantry were to form the reserve, after detaching a flank guard of one company, with one machine gun, to a distance of 400 yards from the left of the 103rd. The attacking units were to deploy with a first line on a combined frontage of 700 yards, the maximum, as experience had shown, on which the punts could be moved in line without confusion; a second line was to follow at a distance of 200 yards, and a third line 300 yards from the second; and then were to come the 119th and Ambulance units in close formation and 200 yards further back. The Mountain Guns were to be on the right of the front line, and the machine guns of the Oxfordshire and Buckinghamshire Light Infantry and 103rd on the right of the leading companies of their units. It was, in addition, verbally explained to the commanding officers that, with the object of avoiding frontal assaults, and in order to allow the men to take the greatest advantage of the covering fire of the guns, which necessarily would be behind the right of the troops, the infantry should direct their movements some distance to the westward of the western edges of their objectives; and should then deliver their assaults against the right and right rear of the enemy's positions. Further, the direction of the advance should

from time to time be changed with the object of misleading the enemy as to the points where the assaults were eventually to be made. This plan was quite successfully carried out, except that it is not clear whether it was found to be practicable to change direction in the manner suggested. But the contrary might have been the case had the Turks placed machine guns so as to flank their trenches from the northern portions of their various positions; for guns so posted would not have been exposed to the aimed fire of the British artillery, and could have played with effect on the attacking troops as they came in from the flank. Perhaps, then, it is better not to tie down, before a battle, subordinate commanders who know their business to definite methods of attack, but to leave these to be arranged at their discretion according to the circumstances of the moment.

Sir John Nixon now took another step, which also seems to be of doubtful advantage, for he arrived, with a number of staff officers, at Kurna at 5 P.M. on the evening of the 30th May; the Commander-in-Chief and his officers being accommodated in two small steam yachts that had been borrowed from the Shaikh of Muhammara. According to the Official Account Sir John did this "in view of the unusual nature of the operations, of the fact that he was himself controlling the demonstrations on either flank, and of the feeling existing.....that more troops should have been detailed for the attack.....and he informed General Townshend that he had no intention of interfering with the conduct of the operations....." * It is, however, generally held that when a Commander desires to be present during the whole of the course of a battle he should deliberately assume the control over the operations, since he cannot divest himself of responsibility for measures that are being taken under his continued observation, and it is never wise to divorce responsibility from effective control. It certainly appears that Sir John did not interfere in any way with the freedom of action of his subordinate, nor does the presence of the Commander-in-Chief seem to have been prejudicial to General Townshend's initiative, although the contrary might well have been the case; but even a general as self-reliant as the commander of the 6th Division would probably have preferred the room of Sir John Nixon and his staff to their company; and had the attack been unsuccessful a very difficult situation for both leaders would have arisen.

* He subsequently acted in the same way at the battles of Kut-al-Amara and Ctesiphon,

The weather was now continuously and intensely hot and oppressive, the temperature on shore being, on the 30th May, 112° in the shade, so that the battle was fought under unusually exacting conditions. On the night of the 30/31st May every man of the three battalions that were to advance up the right bank of the Tigris "slept in the mud opposite his boat, ready to embark without confusion in the dark hours of the morning. It was a steamy night without a breath of wind; warm mist hung above the creek, and clouds of mosquitoes quivered over each sleeping form." At 4 A.M. the routes to the position of assembly 1,200 yards to the north-west of Kurna were flagged, soon afterwards the boats moved off and, by 4-45 A.M. the Mountain guns and the larger portions of the three battalions were in their places. "Looking down the line of the boats one could see the figures sitting motionless, helmet and puggaree silhouetted in black against the golden background of the sky. Now and then came the sound of half whispered orders, or the rattle of a pole against a boat. Then suddenly the sun shot above the level horizon.....just as suddenly the stillness was broken. Away to the right from the palms hiding Nuhairat came four hollow booms in quick succession—the howitzer battery had opened the bombardment, and the day's work had really begun." (Map 2.)

The bombardment, which was commenced at 5 A.M., sunrise, was directed on Norfolk, One Tree, One Tower and Gun Hills, and was apparently effective for the objectives soon became enveloped in clouds of dust and smoke. It was about 20 minutes before the enemy's guns on One Tower and Gun Hills replied, and they then fired only on our artillery and warships, ignoring the infantry who were probably hidden by the rushes. The little force under Climo began its slow advance up the right bank of the Tigris at about 6 A.M., accompanied by a party that had been detached from the Artillery for the purpose of observing and reporting on the practice of our guns; and half an hour later the men of the 22nd Punjabis, who had moved off during the night, could be seen closing on One Tree Hill; but without the Mountain guns, for these had been unable to keep up with the advance that had had to be made partly by boat, but in the more shallow water by wading. One Tree Hill was taken soon afterwards from a garrison of 20 only, three of whom were killed and 17 captured; and now the 22nd could give assistance to their comrades by firing on Norfolk Hill and One Tower Hill. At about 7 A.M. the Oxfordshire and Buckinghamshire Light Infantry, who had been

well supported by their machine guns and those of the 119th were half a mile from Norfolk Hill. The four guns of the Mountain Battery had meanwhile opened at 5-30 A.M., and then advanced by alternate sections to within a mile of Norfolk Hill, and, their fire, and that of the howitzers, now became so effective as to silence the enemy's rifles and machine guns except from the trenches on their right. Not long afterwards the men of the Oxfords, after wading for 100 yards, rushed cheering against the right of the position, supported, up to the very last moment, by the Mountain and Machine guns, the remainder of the land artillery having now directed their fire on One Tower Hill and Gun Hill. Norfolk Hill was then easily captured with the loss of only one officer, who was killed, and five men wounded; but the enemy's casualties amounted to 75 killed, 26 wounded, and 34 prisoners, all the rank and file being Arabs.

At about 5 A.M. after the necessary cut had been made in our bridge, and the removal of the booms protecting it had been completed by the Engineers, the *Espiègle*, with Nunn and Townsend on board, and the *Clio* had steamed to Fort Snipe, preceded by the tugs *Shaitan* and *Sumana*, which were acting as mine sweepers, and here the ships were joined by the *Lewis Pelly*. The sloops then engaged the enemy's artillery on Gun Hill, and came under their fire from which little damage resulted. Subsequently the 4 inch and 5 inch guns of the River Section were also sent a short distance up the Tigris from their positions near Kurna so as to give better support to the infantry. Later on, after the capture of Norfolk Hill, the *Espiègle* and *Clio* moved to a point near it, and here they were both hit by the enemy's shrapnell. At the same time the *Odin*, and the *Lawrence* and *Miner* with the three 4·7 inch guns in tow, steamed up to Fort Snipe from their places in the Shatt-al-Arab and Euphrates.

At about 8 A.M. the Oxfordshire and Buckinghamshire Light Infantry re-embarked, the armoured bellums, whose weight had caused much delay in the advance, being now relegated to the third line; and the men of the battalion then began to make their way towards One Tower Hill, which was being shelled by the Mountain guns at a range of 2,000 yards, as well as by the artillery of the Land Section and the war ships; but the guns in the horseboats and barges were now firing at Gun Hill. The enemy's fire from One Tower Hill was perhaps rather more powerful than had been that from Norfolk Hill, and, although by 9 A.M.

it had been practically subdued by the British Artillery and the machine guns of the Oxfords and 119th, the latter unit was, as a measure of precaution, moved up to the support of the British battalion. Not long afterwards, however, One Tower Hill was captured without difficulty by the Oxfords, who again assaulted the right of the Turkish position. Our troops hardly came under gun fire at all, and their casualties in this attack only amounted to one officer and ten men wounded. The enemy's loss was four men wounded, but one Turkish officer and 86 Arab soldiers as well as one 16-pounder gun were taken. A piece of good luck now also happened to the British, for an electric switch for firing 24 mines that had been placed in the Tigris and marshes was found intact on a sand spit near One Tower Hill, the men in charge having bolted without carrying out their duty and exploding the mines. The Engineer officer in command was also captured, and was subsequently induced to point out where the mines had been placed.

While the Oxfordshire and Buckinghamshire Light Infantry had followed this victorious career, the 103rd had pushed steadily towards Gun Hill, although hampered by the greater density of the reeds on their line of advance, and were at this juncture a mile from the small knoll named Shrapnell Hill. In order to give the most effective assistance to the 103rd the two sections of the 30th Mountain Battery were now moved to within 2,500 yards of Gun Hill; and, with their support and that of the heavier River ordinance, and also of the machine guns of all three battalions, as well as of the men of the Oxfordshire and Buckinghamshire Light Infantry who were lining the small sand spits lying to the north of One Tower Hill, the 103rd pressed forward. Nothing could be seen of the objective by the attacking infantry, but to the enemy the red flags and punt poles were apparently visible and were a target on which to direct rifle fire. On the other hand our covering fire proved to be too much for the Turco-Arab garrison, and also for the marshland Arabs who were harassing our left, and, soon after 11 A.M. the two Turkish guns ceased firing, the musketry died away, and white flags began to be raised. Eventually the Hill was occupied at about 11-40 A.M., one Turkish officer, 132 Arab soldiers, five of whom were wounded, and the two guns falling into our hands; but the casualties of the 103rd had only been two wounded and of the 119th seven were killed or wounded. It was now found that, apparently for purposes of protection, the enemy's guns had been so cited that they could

not fire at any target much nearer than Fort Snipe; a fact that showed how little an attack had been expected, and also accounted for the immunity of the infantry from gun fire during their advance.

While the battle was in progress airmen in two aeroplanes, which has reached Basra on the 14th May, and had been flown to Kurna early on the 31st, had made a reconnaissance over Abu Ahran Hill; and the airmen had reported that the Hill was garrisoned by 2,000 troops with four guns, and that there were also one and a half battalions at Muzaibila and half a battalion at Ruta. The Marmariss, the Lynch Company's steamer Mosul, which had been seized by the enemy on the outbreak of war, a launch, and other shipping were seen to be lying between Muzaibila and Sakrikiya.

The question must now have arisen whether the attack was to be pressed at once or continued on the 1st June. In favour of going on was the fact that the enemy had made a feeble resistance in their advanced positions, which would augur well for the success of an immediate attack on Abu Ahran. And no one was more definitely aware than General Townshend, as shown by his subsequent actions, of the importance of exploiting success to the utmost. But the day had been intensely hot, the men of the 17th Infantry Brigade were tired out by the great exertion of driving the bellums through the reedy marshes, and a movement up river by the steamers could not be undertaken until the position at Abu Ahran, with which the River Section had exchanged a few rounds, had been captured, the channel of the Tigris swept clear of mines, and the obstruction removed. It is true that men will sometimes accomplish the apparently impossible when urged by a leader who enjoys their confidence and affection; but a judicious general knows that there are limits to human endurance and that to pass them is to court disaster, and Townshend, therefore, had to be content with his preliminary success. At 12-15 P.M. he issued instructions that all the units of the advanced guard group, with the exception of the Oxfordshire and Buckinghamshire Light Infantry, were to concentrate on Gun Hill, which was to be entrenched, as was One Tower Hill also, and a strong piquet was to hold One Tree Hill. Eventually the 103rd and 119th settled down on the first with the 30th Mountain Battery; and the Oxfords, and the bulk of the 22nd, who were unable to reach Gun Hill, occupied One Tower Hill. The river steamers, which had moved from

their berths near Muzaira'a to Fort Snipe as soon as our success was assured, were during the afternoon brought up behind the war vessels, which were off One Tower Hill; the River Section of the artillery was collected in the Tigris off Norfolk Hill; and the ships that had sailed up, but had not met with much opposition in the Al Huwair, were recalled, as were the Comet and the horseboat with the 4.7 inch gun, which had bombarded Ruta and the Sandhills, from the Shwaiyib.

There was no further fighting on the 31st, although the shipping was apparently within range of the guns on Abu Ahran; and the only incident that occurred in the afternoon was when the mine sweepers came under fire as they rounded the bend in the Tigris to the east of the Barbuckh, which caused them to move at once down stream. In the evening a boom was placed across the river for the protection of the shipping against floating mines.

The inactivity of the Turks perhaps aroused suspicions that they were about to follow the policy that had been adopted in the fighting for Kurna on the 8th December, 1914, and retire so as to avoid attack. General Townshend who was still in the Espiègle, did not, however, feel justified in then taking such liberties with them as was afterwards done; and, at 4 P.M., therefore, he issued orders for the next day's operations. In these it was laid down that the offensive would be renewed at 5 A.M. on the 1st June against Abu Ahran Hill, as a first objective. A frontal attack on this position would be made by the flotilla, the troops in the steamers, and the bulk of the artillery. Meanwhile the 17th Brigade group were to carry out an enveloping attack, starting from Gun Hill at 5.45 A.M. and coming in on the enemy's position from a westerly direction with the object of covering the landing of the 16th Infantry Brigade at Abu Ahran village. When this had been accomplished the 16th Brigade were to advance on Muzaibila, and the 17th were again to circle outwards and attack the enemy from a westerly direction. In the first instance, then, the more mobile troops were to act as a covering, and in the second as an enveloping, force, the enemy being, in each case, subjected to the severe ordeal of an attack from two directions.

Much of the night was spent by the men of the 17th Brigade group in dismantling the unwieldy armoured bellums in order to facilitate the movements of the troops, and by daybreak most of the necessary work had been completed. Since artillery

fire had been a large factor in the success that had been gained on the 31st, the action of the 1st June was opened by a heavy bombardment of the Abu Ahran position, which began at about 5-30 A.M. There was no reply, and the war vessels, therefore, steamed up river preceded by the mine sweepers, on board one of which was the Turkish Engineer, who was of great assistance in locating the enemy's mines; and soon the ships anchored off Abu Ahran village. Not long afterwards one of the airmen, who had flown over the Turkish position, dropped a message on to the *Espiègle* with the news that it was evacuated and the Turks in full retreat. Meanwhile the advance of the 17th Brigade had begun and when, after a hard struggle, the bellums had, at 7-15 A.M., been driven through the high reeds surrounding Gun Hill, the troops were able to see that Abu Ahran Hill was no longer occupied by the enemy. Since violent firing was heard at 7-40 A.M. which, as it turned out, was being directed at our aircraft, the advance, however, was continued with due precaution; but, at 8-40 A.M. the Hill was reached, and at 9-15 A.M. the Oxfords occupied the few tumbledown huts and booths known as Muzaibila.

While this was taking place General Townshend had issued instructions that the whole of the troops and transports actually with him were to assemble off Abu Ahran village; and, after informing Sir John Nixon that he was about to reconnoitre the obstruction that had been placed in the river near Ruta, Townshend proceeded, with characteristic energy, and in company with the Senior Naval Officer, Captain Nunn, in a launch to examine it. Fortunately the work had not been well done, and half of the channel was found to be free leaving room for the passage even of the sloops. It only remained, therefore, to cut a number of mine cables, which were found in the vicinity, and to buoy the fairway before pursuit could be undertaken.

On returning to the *Espiègle* Townshend spoke to Sir John Nixon, and told him that he hoped to enter Amara with the flying enemy, and that he would at once go as far as Ezra's Tomb (Azair) some 25 miles upstream, and at the entrance of the narrow, winding, and difficult stretch of the river between the tomb and Kala Salih. (Map 1.) He then gave orders, at 2-30 P.M., for the 16th Infantry Brigade to disembark at once with kits, tents, and rations sufficient for ten days, and, with the Mountain Battery and the 18-pounder that was in the barge, to hold Abu Ahran and Muzaibila. The 17th Infantry Brigade and the 22nd

Sappers and Miners were to embark in the *Medjidieh*, *Blosse Lynch*, and *P. 1* in each of which, it will be remembered, there were two guns of the 63rd Field Battery, and, with the *Norfolks*, who were still in *P. 3*, the remainder of the River Section of the Artillery, one of the 4·7 inch guns, and the Hospital steamer, were then to proceed to Ezra's tomb. (Map 2.)

It is not difficult to see that this transshipping of units would take time, and, although to criticise is always invidious, the question must be faced whether this time was to be spent profitably or not! For time is a thing that few commanders can afford to waste at any period of a campaign, since in war it is one of the fixed necessities of success that every moment should be well employed; and time is never so valuable as in a pursuit when the most must evidently be made of what perhaps is only the enemy's momentary weakness. It is stated in the Official Account that General Townshend's reason for this order was that he "wished the 17th Brigade to have the honour of leading the pursuit. They had undergone a trying time at Kurna and had seen less fighting than the other brigades. There was no reason to anticipate a direct and unopposed advance to Amara would be possible, so that a few hours delay entailed by the transshipment seemed to him unobjectionable." It cannot be questioned that the giving of due and kindly consideration to the feelings and ambitions of troops is one of the elements of success in war, for this will arouse enthusiasm and affection, which are among the most powerful forces at the disposal of humanity; but when loss of time is weighed in the balance against such an act of policy the scale, as it seems to me, turns definitely in favour of avoiding such loss of time. However this may be the consequence of General Townshend's order was that the units of the 17th Brigade remained for the whole of an intensely hot day on the shadeless, burning, sands of Abu Ahran, until the ships arrived in the afternoon, and it was evening before the embarkation actually commenced.

After his interview with Sir John Nixon at Abu Ahran Townshend had hurried away to join the flotilla, for the Navy, in spite of the difficulty of navigating a half-charted, winding, river whose course could only be guessed by the greater flow of its stream, were about to make the best use of their mobility by pursuing the Turks, and were also prepared to carry the General to the place where military operations could again be profitably renewed. And, at 3 P.M.,

the *Espiègle*, in which were Nunn and Townshend, the *Clio*, *Odin*, *Shaitan*, *Sumana*, *Lewis Pelly*, *Comet*, and three horse-boats in each of which was a 4·7 inch gun, steamed past the obstruction, on which a Naval party were at work, and were soon in full pursuit, the *Shaitan* leading. At about 5·30 P.M. shell fire was opened by the *Shaitan* on the enemy's launch *Bul-bul*, and subsequently the sloops fired on the *Marmaris* and *Mosul*; and, although the upper works of the last were hit, neither she nor the *Marmariss* had been put out of action by nightfall when the British stopped five miles to the north of *Ezra's tomb*. On the other hand the Turks had been forced to cast off a large steel lighter, which carried mines, munitions and three field guns, two other lighters, and three *Mahailas*, and the *Odin* was left behind to secure them. Townshend also detached part of his staff in the *Odin* for the purpose of arranging for the further movements of the troops, and at the same time sent a report to Nixon. The pursuit was then continued until the enemy's vessels were lost to view in the darkness, but, before the ships anchored at 8 P.M. the *Shaitan* had captured a *mahaila* full of troops, and our searchlights showed up the *Bul-bul*, which was now a wreck.

When the moon rose at 2 A.M. on the 2nd June Captain Nunn steamed on again, up the narrow twisting channel, with the *Espiègle*, *Clio*, *Shaitan*, *Sumana*, *Miner*, *Comet*, and the 4·7 inch guns; and, although the larger ships often missed the fairway and grounded in the mud, the British were able to proceed sufficiently far to open fire in the twilight on the *Marmariss*, which had stuck fast. She soon burst into flames and was abandoned by her crew and captured, as was a lighter near her in which were 35 soldiers. Another valuable prize was then won for the *Mosul*, which had been tied up to the bank of the river a couple of miles above the *Marmariss* was boarded and taken and seven *Mahailas* also. In all 240 prisoners, five 15-pounder guns and quantities of arms and ammunition had already fallen into our hands.

Since it was now evident that the Turks were on the run, but that the pursuit could not be carried on by the larger vessels, these were brought back into deeper water, and arrangements were also made to dispose of the prisoners. Nunn then boldly decided still to go on and to try and reach *Amara* and find out what was happening there, and, after a conference with Townshend who left orders that the *Norfolks* were at once to follow

* The sun set at about 7 P.M.

him to Kala Salih, they both, together with the Political Officer, Sir Percy Cox, went on board the Comet. The Comet then steamed again up river, at noon, in company with the Shaitan, Sumana, Lewis Pelly, the 4.7 inch guns, and a launch, the total of the British personnel, exclusive of officers, now only amounting to 41.* Kala Salih, a dirty little township lying on the left bank of the Tigris in a grove of palm trees, was reached at 5-30 P.M., and here a few rounds were fired at a small body of the enemy's cavalry and two companies of infantry. The area of marshland had now at last been left behind, and the river flowed between its banks on which were occasional villages of mud and daub, or of oval shaped shelters of reeds; and beyond, dimly seen in the mirage and shimmering in the great heat, lay an apparently endless plain, flat as the sea, and covered with low scrub; but the oppressive heaviness of the air of the marshes had passed away, and, hot though it was, no small relief was experienced in breathing a drier atmosphere.

It is all-important in war to keep in touch with the enemy, which is never more necessary than when they have been beaten; and a very mobile force can and should evidently run great risks in doing so. This Nunn had done, and having gone so far, further already than the bounds of ordinary enterprise, in pushing with his small detachment far into what at best could only be a half friendly district, he and Townshend were committed to the policy of making the very most of the moral effect that had been produced by success and would be reinforced by surprise. When the headman of Kala Salih, which like all the villages that had been passed by the pursuers was remarkable for its display of white flags, came to the Comet to make his submission, peremptory orders were in consequence gravely given to him by Townshend that supplies were forthwith to be collected for the 15,000 men who would shortly arrive. After communicating by launch with Sir John Nixon, for the Comet could receive but could not send wireless messages, the Comet, Shaitan, Sumana, Lewis Pelly, and the gun lighters, steamed northwards until nightfall, when the vessels tied up to the bank of the Tigris six miles above Kala Salih; and here information was obtained from the local tribesmen, who crowded down to the river to gaze at the British, that Turkish troops were still in Amara.

*Three sailors two marines and 12 soldiers of the Queen's Own and the 1/4th Hampshire Regiment, in the Comet; eight sailors in the Shaitan; eight sailors in the Sumana; four sailors and one marine in the Lewis Pelly; and two sailors and one marine in the launch.

A start was again made at daybreak on the 3rd June, and, on reaching Abu Sidra, which is 12 miles from Amara, at 6 A.M., the flotilla stopped for a while in order that the leaders might take stock of the situation. It seems that Townshend now wished to await the arrival of reinforcements, as it seemed certain that the Turks would defend Amara, a town said to contain 20,000 inhabitants; and it appeared to be ridiculous to attempt to take the place with the tiny force that was in the ships. Captain Nunn, however, was strongly in favour of an advance to Amara, and he may have argued that, if it were held in strength, the ships could easily make good their escape; and, if not already occupied by the enemy, the presence of the flotilla might prevent them from entering it and save further fighting. There was also the fact that the Turks could not be sure whether the British General was not in reality being closely followed by the 15,000 men, of whose pending arrival at Kala Salih they would probably have heard from the Arabs; and fear, as is well known, causes men to form wrong estimates as to what is likely. In war the highest test of leadership lies always in the true classification of these moral factors, and in this case Nunn considered that reason was on the side of resolution. Townshend fell in with these views, and, as vigour and ability of execution also justified the boldness of the enterprise, the British gained a brilliant success.

At 9-45 A.M., therefore, the flotilla went forward, and the *Shaitan*, and a launch, steamed northwards, under Lieutenant M. Singleton, R.N., followed, after an interval, by the rest of the little squadron, and now wireless messages were received from Nixon that there were weak forces of the enemy at Halfiya, and that three weak battalions from Arabistan had either reached or passed Amara; also that three Turkish vessels had been seen steaming away from the place. As the *Shaitan*, accompanied by the small launch, came into the straight reach two miles below Amara the accuracy of this information became apparent, for a body of Turks was seen to be crossing a bridge of boats and embarking in a barge that lay beside a steamer. The Turks now opened the bridge and attempted to pass the vessels through it, but abandoned the ship and barge and scattered when a shell was fired at them. Not a shot was fired at the *Shaitan*, but, as she went on, her crew saw 1,500 men retiring up the right bank where the Tigris bends sharply westwards just above the bridge. She then steamed after a Turkish vessel

that was going up-stream, and, after passing through the bridge, sailed past the town* where it was observed that the bazar on the left bank was full of troops who were in the greatest confusion. Above the town the British saw 1,000 troops who were apparently trying to cross over one of the big canals that flow eastwards from the Tigris. Neither side opened fire, but, when the tug had gone on for about half a mile, and had tied up on the right bank, six officers and 100 armed men came to her and surrendered. The officers and the arms were taken on board, and orders were given to the men to go as prisoners to Amara, which they did. Immediately afterwards 150 armed soldiers came out of a palm grove and gave themselves up, and these also were disarmed and sent to Amara. The Shaitan then turned back to rejoin the other ships, which were a mile away.

It now fell to General Townshend to develop the situation that had been created by the daring of the sailors, and it was with equally extraordinary coolness and ability that he played his part. Accompanied by Captain Nunn and other officers he now landed at the Custom's House, and here he was met by Halim Bay, the Governor of Amara, and 30 or 40 officers who had come to surrender themselves. These were taken into custody, and orders were given to the Governor to arrange forthwith for the provision of rations for 15,000 men who would shortly arrive. A Naval Lieutenant, with two Sailors, one Marine, and the 12 Soldiers, was then sent on shore to keep order on the river front, and here he received a message that a crack Turkish Fire-Brigade Battalion was ready to surrender at its barracks. The surrender of 400 soldiers, with their officers, was received by one Seaman and one Marine, who went to the barracks with an interpreter; and, under these two, the battalion fully armed was marched from the barracks to the river side and then into a large lighter, which, when filled with about 800 prisoners was anchored in the stream under the guns of the ships. And so ludicrous had the situation now become that officers and men were obliged every now and then to walk to the other side of the deck or round a corner where they could give vent to their laughter. But, since the comedy could not continue indefinitely,

* Amara is a fairly large place containing perhaps 10,000 inhabitants. The river frontage on the left bank is lined for about one and a half miles with substantial double-storied houses with flat roofs, and here ships can lie alongside the bank and load or discharge cargo. On the opposite shore there are groves of palms in which are many huts and hovels but few good buildings.

the launch was sent full speed down river to look for and expedite the arrival of the Norfolks, of whose despatch a news had come by wireless. The surrenders, however, still continued, for soon afterwards some officers and 50 men marched to the Turkish Naval Barracks and gave themselves up to its guard, three soldiers of the Queen's Own. Somewhat later in the afternoon it was reported that a body of 2,000 troops was marching towards Amara from the east, and these, as it subsequently appeared, were the advanced guard of the force from the Karun. But when the Shaitan steamed to the north of the town and fired a few shells at them 50 of the soldiers surrendered themselves and the rest turned back.

Notwithstanding the very small number of British that were holding Amara the moral effect of our sudden arrival and previous success was such that even the night of the 3rd/4th June passed quietly as regards the enemy, who perhaps were influenced by the searchlights of a steamer, P. 3, that could be seen down river; but a strong gale began to blow which caused much inconvenience to our shipping. Early on the 4th June Arab roughs started to plunder the Turkish supply depôts, their Hospitals, and the residences of the officials; and they even ventured on to the river front until dispersed by the fire of a machine gun. The arrival, at 6-30 A.M. of P. 3. with the Norfolks, who had been delayed until nearly 6 P.M. on the 2nd by the congestion of traffic in the narrow stream at Ezra's tomb, put an end to what was becoming a dangerous situation; but two minor attacks were made by Arabs on the western bank of the Tigris before half of the 104th reached Amara at 3 P.M. The Dorsets came in two hours later, followed by the River Section of the Artillery.

While Townshend and Nunn were carrying their venture to so successful a conclusion, the 17th Infantry Brigade, closely packed in the hot little river boats and their barges, had steamed up the Tigris on the 2nd June, accompanied by Nixon and his staff; and, at about mid-day, the troops came in sight of their destination, Ezra's tomb, "which shimmered in the distance like a huge balloon suspended on a haze of green. A nearer view revealed the blue balloon as a gracefully shaped blue dome showing above the surrounding palms," and at 3-30 P.M. the vessels were alongside the shrine, which is on the bank of the river, and the men ready to disembark. This proved, however, to be both difficult and tiresome, for the landing places were few

and slippery, and much trouble was experienced in getting men and animals on shore.

The accommodation at the tomb only consisted of a courtyard 200 yards square on two sides of which there were two-storied buildings of small cell-like rooms, used by the pilgrims to the shrine, and described as being "menageries of every insect imaginable, winged and legged;" but luckily there were also two small groves of palms in the enclosure and a few clumps outside it where cleaner shelter could be obtained. Here the men of the 17th Brigade remained in billets and in camps "for three grilling days and nights, cursing their fate and wondering if heat and damp and mosquitoes and bugs had ever so afflicted mortal man before." Fever laid its hand on most, and sunstroke and heat-stroke were also not uncommon, and the only work consisted in passing prisoners down the river and in sorting the captured material.

Sir John Nixon, who had naturally become anxious for the safety of the handful of men under Nunn and Townshend, in view of the reports that had been made by our airmen of the presence of a considerable body of the enemy near Amara, had in the interval taken steps to expedite the despatch up river of the 16th Infantry Brigade; and as a result, the steamers began to pass up the Tigris early on the 3rd June. In the light of what actually occurred it seems that Townshend would have been better advised had he not landed the 17th Brigade at Ezra's tomb, only 25 miles above Abu Ahran, for, as things fell out, Amara was reached at the time when the supporting military force, now the 16th Brigade, had only just begun its voyage. But, it is not impossible that General Townshend anticipated that the enemy would make a stand near Ezra's tomb, or in some such locality as Kala Salih, and that the decision to land the 17th Brigade was prompted by the desire to concentrate the remainder of his force under its protection before again advancing. Apart from this arrangement it seems that the lack of means of quickly communicating back from the front* was responsible for the slowness with which support reached the audacious advanced guard; for Townshend was not apparently able to vary the dispositions of his main body so quickly as to meet the changing requirements of the situation.

* The order that the Norfolks were to follow Townshend was received two and a half hours after the Comet had gone up the Tigris, and P. 3, as already stated, was then delayed for three hours by congestion of traffic in the river.

Minor criticism can be made of any human achievement for perfection is denied by the very conditions of our existence, and, in spite of criticism, it may, therefore, safely be claimed that the defeat of the Turks at Kurna and their pursuit—the regatta as the operations were called by the troops—were feats of arms that can justly challenge comparison with the most brilliant episodes on a similar scale in all military history. To Sir John Nixon, whose brain alike conceived and dared, is due all the credit of very acutely penetrating the secret of the weakness of the enemy's dispositions, and resolutely adhering to his judgment in spite of the doubts of those who were to carry out the attack. A strong foundation of success for the project was then laid by General Townshend's thorough measures of preparation and able plans. The close and skilful co-operation of Naval and Military forces proved to be irresistible in the battle, Captain Nunn made the most intrepid, yet the best possible, use of mobility for the purpose of exploiting success, and, under the inspiration of General Townshend, all ranks then coolly grasped the opportunity that had been created by the Navy. The British lost in all 4 killed and 21 wounded, they inflicted 120 casualties on the Turks, captured 1,773 officers and men, besides 12 field guns, 5 naval guns, 2,718 rifles, and a quantity of ammunition. In addition, the Marmariss and Bul-bul were sunk, the river steamers Mosul and Kazimi taken, the latter at Amara, and also a couple of tugs, two motor boats, 12 iron barges, and a number of Mahailas.

Had this dramatic feat of arms been done in a small war, such as an Afghan, Egyptian, or South African, England would certainly have rung with the praises of those who effected it. In the Great War the achievement passed almost unnoticed.

APPENDIX.

Distribution of the Force at the end of April 1915.

Kurna Area.—

The 17th Infantry Brigade (less the 119th).

1st Battalion, The Oxfordshire and Buckinghamshire Light Infantry.

The 22nd Punjabis.

The 103rd Mahratta Light Infantry.

The 86th Heavy Battery (four bullock-drawn 5 inch guns) less one section of 2 guns.

The Battle of Kurna (Qurna).

One section of the 104th Heavy Battery (two bullock-drawn 4 inch heavy guns).

The 1/5th Hampshire Howitzer Battery (four 5 inch howitzers).

The Sirmur Sappers and Miners.

A Searchlight Section.

The Bridging Train.

Administrative Units.

Kurmat Ali.—

One company 117th Royal Mahrattas.

Dirhamiya near Shaiba.—

The 18th Infantry Brigade (less the 2nd Battalion, The Norfolk Regiment).

The 7th, The Duke of Connaught's Own Rajputs.

The 110th Mahratta Light Infantry.

The 120th Rajputana Infantry.

The 16th Cavalry.

The 23rd Mountain Battery (six 10-pounder mountain guns).

Three companies of the 48th Pioneers.

The 17th Sappers and Miners.

One section of the 34th Divisional Signal Company.

Administrative Units.

General Gorringe's Force.—

The 6th Cavalry Brigade (less the 16th Cavalry).

The 7th Haryana Lancers.

The 33rd, Queen Victoria's Own, Light Cavalry.

S. Battery, Horse Artillery, (six 13-pounder guns).

Signal and Administrative Units.

The 30th Infantry Brigade.

The 1/4th Hampshire Regiment.

The 24th Punjabis.

The 76th Punjabis.

The 2/7th Gurkha Rifles.

The 12th Infantry Brigade.

The 2nd Battalion, The Queen's Own, Royal West Kent Regiment.

The 4th, Prince Albert Victor's, Rajputs.

The 44th Merwara Infantry.

The 90th Punjabis.

The 67th Punjabis (attached).

The 10th Field Artillery Brigade, (less one gun 63rd Field Battery).

Seventeen 18-pounder guns.

Number 6 Ammunition Column.

Maxim Gun Battery.

The 12th Company Sappers and Miners.

The 11th Rajputs.

The 66th Punjabis.

One Company 48th Pioneers.

Two sections 31st Divisional Signal Company.

Two sections 34th Divisional Signal Company.

Wireless Signal Troop.

Administrative Units.

Basra area.—

The 16th Infantry Brigade (less one and a half companies of the 117th).

The 2nd Battalion, The Dorsetshire Regiment.

The 20th, The Duke of Cambridge's Infantry, Brownlow's Punjabis.

The 104th Wellesley's Rifles.

The 117th Royal Mahrattas.

The 30th Mountain Battery (six 10-pounder mountain guns).

One 5 inch gun of the 86th Heavy Battery, the other was with the force blockading the Euphrates.

The 104th Heavy Battery (four bullock-drawn 4 inch heavy guns, less one section).

The 2nd Battalion, The Norfolk Regiment.

The 119th Infantry, The Multan Regiment

The 22nd Company, Sappers and Miners.

One Pack Wireless Section.

Base Depôts and Administrative Units.

Abadan and Fao.—

Half a company of the 117th.

River Steamers and Tugs.—

Eleven small steamers, six tugs, and three small sternwheel steamers. Two barges were generally lashed to the side of each steamer, and a steamer and its barges could carry from 500 to 800 infantry, or a battery, or about three troops of cavalry.

Naval Detachment.—

The sloops *Espiègle*, and *Odin*, each armed with six 4 inch quick-firing guns, two 3-pounders, and 2 Maxims. The *Clio*, armed with six 4 inch guns, and four 3-pounders.

The Royal Indian Marine paddle steamer *Lawrence*, armed with four 4 inch guns and four 6-pounders.

The yacht *Comet*, armed with one 3-pounder, three old Nordenfeldt guns, and some Maxims.

The yacht *Lewis Pelly*, armed with two 3-pounder Hotchkiss guns, and one Maxim.

The small steamer *Miner*, armed with one 12-pounder gun, one 3-pounder, and one Maxim.

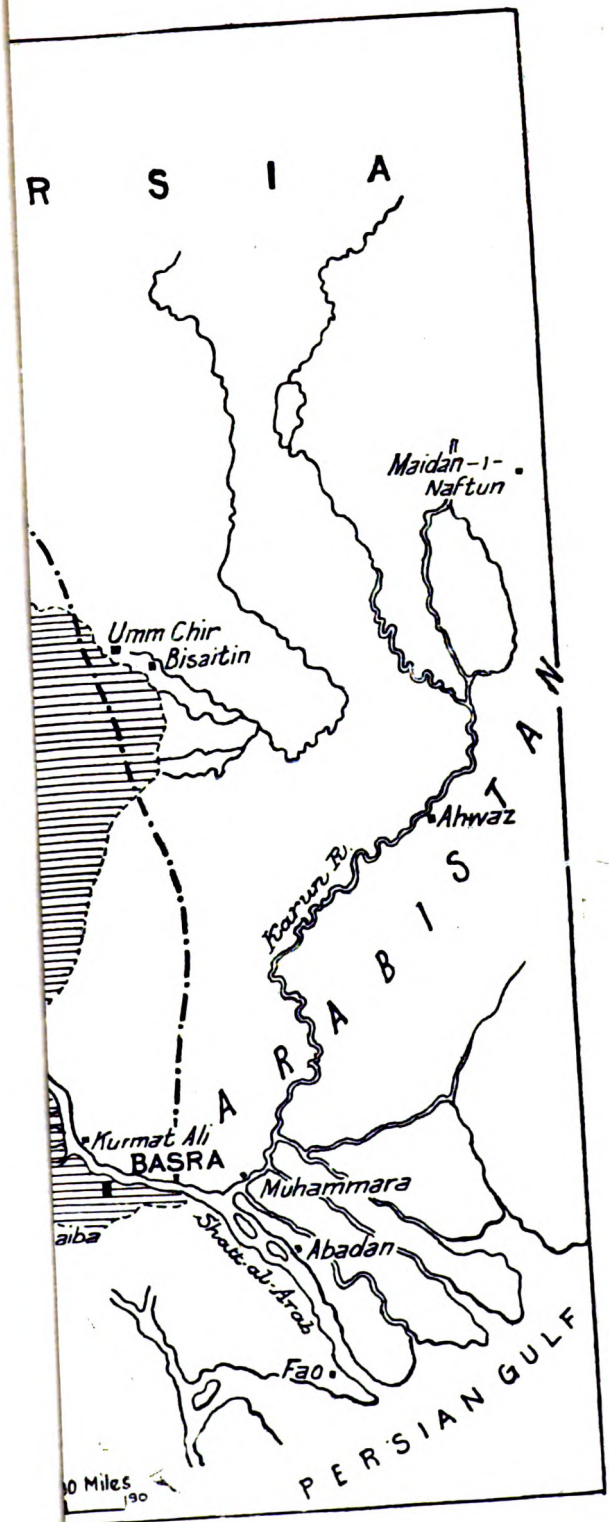
The tugs *Shaitan*, *Sumana* and *Sirdar-i-Napthe*, each armed with one 12-pounder and one Maxim.

The tug *Mashona*, armed with one 3-pounder.

A number of launches.



MAP I.



THE STRIKE.

BY "WANDERER."

It is difficult in India to keep fully in touch with the political situation at Home, and to many the news of the strike has come as a surprise. Yet for many months past the signs of a great industrial struggle have been clear to those who cared to read them. Crises in England, whether political or industrial, have far reaching after effects throughout the British Empire, and such effects are felt almost more quickly in India than in any other dominion.

The present crisis is the gravest since 1914, and will probably prove to be the most serious internal upheaval the nation has had to undergo during the past century.

Though primarily an industrial dispute, it has drawn into the maelstrom of strife the whole machinery of the political, economic, and social organisations of our nation. It is therefore worth our while, indeed it is our duty as individual members of the great Empire to which we belong, to examine carefully the factors leading up to the crisis, the cause of the explosion, and the steps being taken to deal with a movement which has undoubtedly imperilled the nation's existence and has given Great Britain the greatest set back economically since the Great War ended.

It will be remembered that the breach last summer between labour and employers in the mining industry was gradually widening until July when a strike of coal-miners appeared inevitable. A solution could not be found at the moment to settle the difficulties between Miners and Mine-owners, so Government, to avoid a strike at the commencement of winter, postponed matters until May 1st this year by subsidising the industry out of the pockets of the tax-payers to the tune of 20 million pounds. It was hoped that the Coal Commission, composed of men of outstanding ability and integrity, would be able to find a solution acceptable to both parties during this period of grace. The nation, as a whole, believed this would be the case, and until the day the general strike commenced, the apathy shown by the people has been remarkable. Such was the faith of the people in the ability of Government to obtain a peaceful settlement, that few would admit

the possibility of a general strike and the public, as a whole, gave little thought to the matter.

The Coal Commission presented its report at the beginning of March. Both the Government and the coal-owners agreed to accept the findings of the Commission and act on them. The miners, however, through their leaders refused to do so, and throughout subsequent negotiations showed no signs of meeting the employer's half way. The difficulty can be explained very simply. Over seventy-five per cent. of the coal mines in England for some time past have been run at a loss. They would have had to shut down last July had not Government paid the subsidy.

High wages and short hours of labour are demanded by the Miners' Federation, whereas the mine-owners point out that whilst endeavouring to do everything possible to improve organisation and machinery, less wages or longer hours of labour are essential to enable them to compete with foreign markets.

The case is a business proposition pure and simple. It is obvious that the cost of production of coal must be brought below the world market price, if coal is to be sold at a profit to the nation. To continue to sell it at a loss is not practical business and would merely lead the nation to financial ruin.

The Cabinet, for obvious reasons, was opposed to the continuance of the subsidy, and it is clear that the Prime Minister would never receive the support of the people to continue it, the discontinuance of which was advocated by the coal commission.

Negotiations continued until May 2nd, Government making every effort to obtain a peaceful solution, but without avail.

The miners have been supported throughout by the Railway-men's Transport Workers' and other Unions, in fact by the whole power of the Trade Union Congress. It appears that this combine considers itself strong enough through its executive to dictate to Government any terms it pleases. The Trade Union Executive, many of whom hold extreme views, are thus leading the trade unionists, who form the mass of industrial workers in the country, along a very dangerous path—the path of revolution against established government. It is probable that the majority of workers do not realise the ultimate objective of their extremist leaders and are merely interested in their justifiable desire to ensure the maintenance of their present rates of pay and standard of living. The revolutionary factor, aiming at the very foundations of the state, does not appear in the picture as presented to them. The British

working man is not a revolutionary and the realisation of the true effects of his leaders' guidance would probably cause him to withdraw his support.

The challenge to Government given by the Trade Union Executive has of necessity been accepted. Government could not do otherwise. It is obvious that the nation cannot have two masters. The Government, elected by the people, must govern and cannot allow itself to be dictated to by an organised minority. We have the state of Russia before us as a dreadful example of an experiment of this nature. It is a significant fact that the Soviet authorities are making every effort to support the strike by financial aid and by propaganda, with a view to bringing about the downfall of established Government in England. The true aims of the Soviet are clearly expressed in a speech by Zinoviev made many months ago, in which he stated "We are at war with the British Empire; our first weapon is propaganda, our second—force of Arms." It is obvious, therefore, that the Soviet will lose no opportunity to foment the revolutionary element in the present struggle.

The Prime Minister's message to the nation, published in "The British Gazette" states the situation forcibly and clearly as follows:—

"Constitutional government is being attacked. Let all good citizens whose livelihood Labour has imperilled, bear with fortitude and patience the hardships with which they have been suddenly confronted. Stand behind Government, who are doing their part confident that you will co-operate in measures they have undertaken to preserve the liberties and privileges of the people of these islands. The laws of England are the people's birthright. They are in your keeping. You have made Parliament their guardian. The general strike is a challenge to Parliament and is the road to ruin and anarchy."

Our path is clear—to support Government by every means in our power in its efforts to maintain the vital services of the country, which the general strike has partially disorganised. Let us hope that the struggle will be short, as each day it continues means further suffering to innocent people and delays the return of industrial prosperity to the nation.

THE USES OF CAVALRY IN OPERATIONS ON THE NORTH-WEST FRONTIER OF INDIA.

*By Major C. A. Boyle, D.S.O.,
(Ref. Manual of Operations on the North-West Frontier of
India, 1925, paragraphs 10 and 60.)*

The outstanding features of the terrain of the North-West Frontier generally are the high steep mountain ranges from which run down a tangled mass of rugged precipitous ridges, intercepted by deep narrow valleys. In some areas the hillsides are thickly covered with trees and scrub. Roads and communications are usually conspicuous by their absence.

All these factors reduce mobility to a minimum. Our infantry, even the most lightly equipped, cannot compete with the enemy in mobility on the hillsides. The enemy, clothed in a shirt and a pair of loose trousers, has only his rifle and a sparsely filled bandolier to carry. His women-folk are his commissariat and they will always have his food ready when the fight is over. The result of this, in even the most successful frontier campaigns, is that although the enemy cannot resist the advance of our columns, we cannot inflict serious casualties on him—often fewer than he inflicts on us. This consideration would seem to point to the value of the faster moving cavalry used as mounted infantry. The terrain does not coincide with the popular idea of “cavalry country,” but when we define “cavalry country” as that ground which the enemy happens to be occupying, we shall find that we shall have to modify the tactical uses of cavalry to suit the various situations. But then we are faced with the question of supply. It is this that impedes the pace of even infantry and the difficulties of supplying the faster moving columns of mounted troops would probably be insurmountable. It is true that a certain supply of grain and flour will be found in all villages buried under the floors of the houses, and all villages have their bhoosa stacks, but the amount is inconsiderable and would necessarily limit the size of the force which was to be dependent on it. We may take it that a squadron is the maximum force which could hope to maintain itself on local supplies and then only for a limited period.

Throughout the country water is scarce and the only places where it is certain to be found are either in the well-known streams or in the vicinity of villages, although even then it may not meet with the requirements of our medical officers.

The enemy, as has been pointed out, are extremely mobile on their hillsides, are experts in mountain warfare and in laying ambushes; but they have no artillery or machine guns, their supply of ammunition is limited, and they often lack an organised system of command and direction. Hence they themselves are liable to surprise, and find it difficult to meet unforeseen situations.

Frontier warfare, for the purpose of this paper, may be divided into operations involving:—

- (a) The formation of large field forces such as in the Waziristan operations of 1919–24.

Such field forces will be sub-divided into a number of mixed brigades.

- (b) The use of the mobile column or some other mixed force from some station on the Frontier.

- (c) Minor expeditions against raiders. Punitive measures, etc.

In (a) and (b) cavalry may form part of these forces or not. If it does, the usual proportion is one squadron to a mixed brigade.

In (c) cavalry may be used either in combination with other troops, police, or militia, or else independently.

The cavalry squadron, which is attached to a mixed brigade or mobile column, will normally be used as follows:—

- (1) To seize positions on the foothills in front of the slower moving infantry which would be costly for the latter to attack. Here, by reason of the more open nature of the country, their mobility may be used to advantage.

- (2) They may also be used with the piquetting troops to try and forestall the enemy by piquetting the first two hills of a pass through which the force is to advance. In both these cases they will be relieved when the infantry come up.

- (3) They will generally be used with the advanced guard to reconnoitre, as far as the ground permits, valleys leading off the line of advance, villages, and other localities.

- (4) In retirements, they may be detailed, where the ground permits, to hold the rearmost piquets, using their horses to secure their retreat.
- (5) Otherwise they may be used as orderlies and despatch riders, or as a detachment to keep the long transport columns closed up.

It is in the case of minor expeditions against raiders, punitive measures, etc., that the use of cavalry may be said to be the chief essential to success which depends on mobility and decisive action. The enemy in these cases desires to escape, not to fight. The police and militia detachments, which are holding outposts, will certainly close those roads and lines of escape near which their posts have been constructed, but cavalry is the only arm which can hope to search the large areas between these posts, or to cope with the very mobile and elusive foe.

Again, in punitive measures, surprise is the essential to success. It takes but a little time for the whole population of a village to pack up and vacate it with all its cattle and belongings; and an empty village is a poor subject on which to wreak one's vengeance.

When a party of raiders is to be rounded up, or when outlaws, etc., are reported to be hiding in a village, the only hope of effecting their capture is by the use of mounted troops moving at the greatest speed which the ground permits.

Having detailed the various duties cavalry may be called on to perform, let us consider the best methods and formations to adopt in order to carry these out.

(1) *In attack*.—It is well-known how the Pathan fears the sword and lance, and wherever the ground admits, such as in the approach to the foothills or in the wider and cultivated valleys, the *arme blanche* should be used both in attack and pursuit whenever possible. It may, however, be taken as a principle never to charge over unreconnoitred ground, or at any rate without ground scouts in front.

All the disasters that have so often overtaken cavalry in their endeavour to charge a hill enemy (as in the case of the 21st Lancers in the Mohmand operations in 1914) have nearly always been caused by their meeting some unexpected and impassable obstacle, and coming under the enemy's fire at the closest ranges.

The best formation for a mounted advance will normally be "Line of troop columns" extended as much as the ground may necessitate, and line should not be formed till the very last moment.

(2) *Advancing to take up a piquet position.*—The piquetting party should advance covered if necessary by the remainder of the squadron with a patrol in front, in whatever formation is suited to the ground.

The piquet commander should give the patrol its first bound which should be a suitable position on the slopes of the hill to be piquetted and under cover from the summit. He should also detail scouts to reconnoitre the flanks of the hill. The patrol will move at a quick pace to this position where it will dismount and take up a fire position covering the advance of the remainder of the piquetting party. These on arrival will dismount and the advance to the piquet will be made on foot in the usual way. The first position of the led horses will be the point where the party dismounted. From the top of the hill the piquet Commander will be able to choose the second position for his led horses which should be as close as the ground permitting to the piquet and as far as possible under cover. The point to bear in mind is that the mounted advance should be made as far up the hill as possible. If the hill is held by the enemy it may have to be attached by the whole squadron to get the piquet into position.

(A) On the foot hills it may be possible sometimes to take a piquet position at the gallop but this case is rare as such small features seldom require piquetting.

(3) *In retiring from a piquet.*—The piquet will retire in the usual way, i.e., by sections etc., to its horses. The Commander should previously have pointed out to the men some point at which they are to rally and take up another position. When the enemy are pressing, it is best, as a rule, to let the men mount and each make his own way to the rallying point as fast as the ground permits, thus ensuring a maximum of extension.

(4) *Reconnaissance.*—In reconnoitring valleys leading off the line of advance, villages, and other localities, the principles to bear in mind are that all reconnoitring detachments should be strong, and that in broken country their supports should be as close as the ground permits. They should always be on the look out for ambushes, and the formations they adopt should

be made with a view to getting the maximum mutual support possible.

Scouts should be used in pairs: If messages or reports have to be sent by hand they should be in duplicate, each copy being given to a separate despatch rider.

Where narrow paths are the only means of approach, the snake patrol formation will have to be used, but even then the sowars should be in pairs with definite intervals between the pairs.

In addition to the above which are the normal uses of cavalry in hill warfare, let us consider another possible use of this arm; that is, a special mission to be carried out by an independent cavalry squadron. Such missions would normally be on the flanks of a force operating in enemy country, the importance of the objective nature of the country and chance of success, etc., would have to be carefully considered. It has previously been pointed out that a squadron is probably the largest mounted force that can hope to maintain itself on local supplies, and with the addition of emergency rations that may be carried on the saddle, there is no reason why a squadron should not be able to maintain itself for three days.

Such a force should be given a definite objective and the squadron Commander should be given a free hand as to how it should be carried out.

(A) In carrying out such a mission the principle to bear in mind is always to have one party dismounted, ready to fire and to trust to mobility chiefly as a protection from surprise. This at first seems anomalous but with the system described below it will be found that mobility will suffer but little from having one party dismounted. Choose some commanding point not necessarily the highest about a thousand yards ahead on the line of advance, and send the leading troop to piquet it. This troop will advance at the greatest speed and in the best formation the ground permits, in the manner described for advancing to a piquet position. The squadron, with one troop as a rear guard, will follow at a walk and trot. The leading troop leader will ride with the squadron Commander. As the squadron passes its advance piquet, the Commander will point out another position some thousand yards ahead, to which the then leading troop will proceed as above. The rear guard troop will close up and the first piquet will retire, forming a rear guard

to the squadron. The whole distance will be covered in this manner. It will generally be advisable to retire by a different route to that covered during the advance, along which the enemy will probably be lying in ambush.

Action if the enemy is encountered.—If the advance troop is fired at, and is unable to reach its destination it will take up the most forward position possible, dismounted, and the remainder of the squadron will close up to it, and by such offensive action as the ground permits endeavour to drive the enemy from his position. If the squadron be fired at from a flank, it must move at the fastest pace possible and close on its advanced troop, and then engage the enemy in whatever manner the ground permits. The principle to bear in mind, when the enemy is encountered, is to close *forward*, whenever possible on the advanced troop, rather than to attempt the difficult task of withdrawing the advanced troop to the squadron in rear. Secondly care should be taken not to get so involved in subsidiary engagements that the main object of the mission is overlooked.

Protection at night.—This is, as a rule, the most difficult situation the squadron Commander will have to deal with. The difficulty is to delade the horses. The halting place must be near water and therefore probably in a valley. It may be possible to guard the whole squadron bivouac with one piquet, but usually it is not. To form as small a perimeter as possible, it will usually be advisable to ring the horses by troops. The rings may be placed in some irregular formation to suit the conformation of the ground. When in doubt, occupy some village for the night, it will probably be much the safest.

Never halt till after dark.

Don't forget when starting to have your magazines loaded, one round in the chamber, safety catches to the rear.

The advanced troop and any other detachment should have their rifles drawn.

Maybe the real value of cavalry squadrons used independently on special missions, apart from the main force, has not yet been fully realised; and it is conceivable that, under experienced commanders who know both the country and the people, and who act resolutely, the results they will achieve will more than justify their use.

In conclusion there are a few matters which affect every cavalry regiment newly arrived at a frontier station. They will

find both their horses and men weak and slow in the hills. Their horses will be soft footed, and they will find that shoeing them as they have done in the plains will not stop them getting bruised soles, corns, etc.

They will not be able to recognise one Pathan tribe from another, some of which are friendly and some hostile. Moreover, a whole tribe may be split up into factions which are hostile to one another, and will never combine against a common foe. In other words they are unable to recognise friend from foe.

The tactical formations to which they have been accustomed will probably be of little use in the hills, and so, at first, they will be inclined to agree with the old fashioned critics, who are of opinion that, in the hills, cavalry are useless.

Notes on training, dealing with raiders, and horse shoeing are appended.

APPENDIX I.

Some notes and suggestions on training the cavalry soldier to become efficient in hill warfare.

(a) *Physical fitness of men and horses.*—Officers, British and Indian, should be encouraged to go shooting in the hills. An occasional route march might be arranged for all ranks over hill roads and paths. On field parades men should be practised in piquetting and retiring from piquets.

Horses.—When led to exercise, should be exercised on hard roads and not on tan tracks, etc. Standings if possible should be lined with stones. Special precautions should be taken in shoeing (a separate note on this is appended). The ideal to aim at is that horses should be able to trot or canter for distances up to half a mile along a stony river bed without getting lame.

(b) *Knowledge of the surrounding country.*—Officers, British and Indian should be encouraged to go shooting in the hills and the country round the station. The country, divided into sectors, should be reconnoitred by all ranks, and officers should be acquainted with all crossings of rivers, nullahs, and other obstacles; and the location of, and the roads leading to all the nearest villages in the neighbouring independent territory.

They should learn from the official handbooks, or local political officers, the nature of the tribes in their district. Which are

liable to be friendly, which hostile; which tribes are in league with one another, estimate of rifles they possess, etc.

As a rule there is no time to find all this out at the last moment and a careful personal study will be well repaid.

(c) *Piqueting*.--All officers and N.-C. Os. should be acquainted with the principles of piqueting in hill warfare. The elements can be learnt on the parade ground with a lance or pole in the middle representing the top of a hill. But when the elements have been mastered further training must be done on the hillside.

A primary position must be chosen for the horses at the foot of the hill. But when the piquet is in position a secondary position may be chosen further up the hill so that the horses may be under the fire of the piquet itself, and not need a separate party detailed for their protection.

Having dismounted, the advance to the top of the hill is an ordinary dismounted advance with the sections mutually supporting each other with covering fire. Near the top the party should be closed and prepared to receive a sudden counter-attack from the enemy who may be in hiding and then they will rush the top of the hill.

When the piqueting party gets to the top of the hill there are Five things the piquet commander should do. Officers and N. C. Os. should be taught to tell these off on their fingers, thus:—

Thumb.—Decide on the dispositions he will make to hold the top of the hill (his C. O. could only indicate the hill to be piquetted).

First Finger.—Tell off the various groups to the positions they are to hold.

Second Finger.—Reconnoitre all dead ground in the immediate vicinity of the piquet.

Third Finger.—Instruct every man to improve existing cover for himself.

Little Finger.—Reconnoitre all lines of retreat and explain them to all ranks.

If these five things are not carried out it is courting disaster.

In the case where cavalry are furnishing the first two road piquets for a mixed force advancing through a defile, it will be necessary for the piquet commander to leave two sentries on the roadside, below the piquet. They should report the position of the piquet to the rear guard commander.

(d) *Mounted attack and pursuit.*—Squadrons should be practised in riding across nullahs and broken ground in "Line of troop columns" which will give the troop leaders practice in picking and choosing their way.

Pathans, unless they have no way of escape open to them, will not wait to be attacked by cavalry, and so a mounted attack may develop into a pursuit, in which case the enemy will probably scatter on the hillside and in the nullahs, so riding down individuals may be impracticable. Of course the case may occur when a few are trying to escape in the lowlands and valleys and they may be ridden down with the sword. But generally this should not be practised, but rather, long distances should be covered as rapidly as possible by compact bodies, to seize some position in rear of the retreating enemy.

APPENDIX 2.

NOTE ON HORSESHOEING IN THE N.-W. F. P.

On a regiment's arrival at a frontier station, its horses will usually be soft footed, and unless special measures are taken a very large percentage will go lame. The chief causes of lameness will be—

- (1) bruised soles,
- (2) corns,
- (3) sand-crack.

These can, to a great extent, be obviated by the following method of shoeing:—

Let the hoof grow until a flat surface placed across the horse's unshod foot will just touch the frog. In some cases this extra length of hoof may cause contraction of the frog. But that is a small evil compared to the advantages derived from a better protected sole.

The shoe should be of a broad web, and should be applied to the foot so that it overlaps the outside edge of the hoof so that a rupee may be stood up on it. The shoe should have clips in front.

It will be found that these precautions will greatly reduce the average number of lame horses in the squadron.

In the hills of Kurdistan and Persia it has been found that the Persian shoe protects horse's feet much better than the European pattern shoe.

APPENDIX 3.

NOTES ON DEALING WITH RAIDERS.

Before one can make a satisfactory plan of operations against a raiding party it is essential to know how raiding parties usually act.

The following may be taken as the general principles on which they work with the object of obtaining the cattle, etc., etc. of any particular village:—

The evening before the day on which the raid is planned to take place, some travellers will halt at the village and ask to spend the night at the 'hujra' or guest-house. These travellers will consist probably of one or two old men and a woman, with a bullock and possibly a mule or donkey heavily loaded. During the night these travellers will endeavour to get up into one of the village towers. Their rifles will be taken off the mule or donkey or out of their clothes.

A little after dawn when the cattle are driven out to graze the raiding party will descend on them and the boys driving the cattle will give the alarm. The village armed party (Chigha) will turn out to find that it is under fire from one of the village towers. The confusion that ensues will give the raiders sufficient time to get the cattle under way. The occupants of the tower will endeavour to escape at this juncture.

The covering party when not able to get into the village as described above will take up a suitable position outside the village during the night. It must always be remembered that a raiding party does not want to fight and will not fight except to cover its retreat and therefore in operating against them cavalry should work at the fastest possible pace and can take risks which would be impossible in other circumstances. Secrecy is of primary importance. If the raiders have the slightest suspicion that their intended raid has become known they will not carry it out till a later date.

In operating against raiders the following points should be borne in mind:—

- (1) That the objective is to punish the raiders and inflict casualties on them, thereby protecting the village, etc., from the raid.
- (2) That there is little chance of attaining one's objective unless the raiders have actually arrived on the scene

of operations or are engaged in the raid. The troops should therefore, if possible, arrive at the scene of operations and be halted some distance from the raiders' objective under cover, a little before the expected time of the raid.

- (3) As soon as the raid has started a cordon should be rapidly formed, the extent of which will be determined by the extent of the surprise obtained and the progress of the raid. The net should then be speedily drawn.
- (4) It will be extremely difficult to recognise friend from foe. Individual raiders will always claim to belong to some friendly tribe or village and deny any implication in the raid. The political authorities are usually the only people who will be able to identify them.
- (5) The essentials to success are (1) secrecy, (2) mobility, (3) decisive action, (4) bold leadership.

THE CO-OPERATION OF THE MECHANICAL ARMS WITH CAVALRY IN THE MOBILE DETACHMENTS OF A MODERN ARMY.

BY MAJOR E. G. HUME.

The great increase in fire power, and the rapid development of aircraft and of mechanically propelled vehicles, have made it more than ever important that the reconnoitring and covering detachments of an army should have wide vision and great mobility together with the maximum offensive and delaying power: it is the purpose of this paper to examine the capabilities and limitations of Aircraft, Armoured Cars, Tanks, and Infantry in lorries in this connection, and to consider to what extent they can help cavalry in carrying out its rôle in modern conditions.

Aircraft.—The Air Force contend that war in the future may even be decided in the air before it has really begun!—and it would seem that this might well be the case in Europe should one power be very much stronger than the other in the air; in any case, that army which is stronger in aeroplanes after the first air *versus* air struggle, while mobilisation is going on, is over will have a very great advantage in the strategic use of mobile ground forces; such forces, if open to intensive enemy attacks would labour under a very great disadvantage which would very considerably limit their scope of action.

All mobile portions of an army, if they are to be effective, must be provided with aircraft to protect and conceal them from the enemy's air forces and to help them in reconnaissance and inter-communication.

Aircraft and Cavalry are to a marked degree complementary to each other. Aircraft can see over a hill or into a valley beyond a range of hills; Cavalry can still work efficiently when owing to clouds and mist aircraft can see nothing. Aircraft can often locate machine guns, strong points, and light artillery in position and can warn Cavalry; but it is only Cavalry that can clear up the situation and make identifications by taking prisoners. Aircraft have a wider view and much greater mobility; Cavalry can search woods and villages, and can make good a

locality reached until less mobile troops come up. Aircraft trained to co-operate with cavalry can, on emergency, give very quick support to cavalry in difficulties by bombing or low-flying attacks; moreover, aircraft owing to their speed and wide radius of action can help very greatly in inter-communication and in the keeping of touch; matters of the utmost importance to a fast moving force moving on a wide front. Air information alone, however, is, except in very open country, always somewhat out of touch with the ground situation and must usually be confirmed or amplified on the ground.

Armoured Cars.—These suffer from blindness much as Tanks do, and though capable of very rapid and extended movements on roads, their reconnaissance cannot be complete; even when cross-country armoured cars are available they will suffer from much the same disabilities as Tanks. They can season the somewhat out of touchness of air information with some local colour of the ground situation as to certain definite points some time before the Cavalry can come up; but, it is not until the Cavalry come up that really definite reconnaissance can take place.

“Cavalry” armoured cars fitted with wireless and armed with an anti-tank gun as well as machine guns would be invaluable in helping cavalry:—

- (a) By carrying out rapid reconnaissances far ahead, establishing whether or not certain places are held.
- (b) In supporting cavalry reconnoitring detachments and helping them along when held up by machine guns.
- (c) To warn cavalry of gas areas the enemy may have made.
- (d) To protect cavalry against enemy armoured cars and tanks.
- (e) To take cavalry or other commanders rapidly forward for personal reconnaissance.
- (f) To capture important features or bridge-heads before the cavalry can come up, thus being in time to deny them to the enemy.
- (g) Above all, with their wireless and mobility to keep all parts of a cavalry force in communication with each other and with the air force who are co-operating with them.

A cavalry commander possessed of an efficient unit of such armoured cars would, in addition to the communication afforded by air force tenders, be in constant touch with :—

- (1) Any forward armoured car patrols he may have sent out.
- (2) Any detached portions of his cavalry.
- (3) And with the tanks or main columns supporting him.

In addition all detachments, to which armoured cars would be attached, would be able to communicate with aircrafts.

The French, after their experience in the war, have included three squadrons, each of twelve armoured cars and a wireless car, in the composition of their cavalry divisions, the smallest French Cavalry formation of all arms; these are found invaluable as part of every reconnoitring detachment and in the general working of the division. The present French model is an improvised one built on a lorry chassis and armed with a gun and machine guns; it has an arrangement by which a second driver facing the rear can drive the car in the reverse direction—these cars normally advance into action backwards, thus protecting their engines and enabling them to get quickly out of any trouble they may get into, instead of having to turn broadside on to the enemy when turning round to get away as an ordinary car must do; experiments are being carried out to evolve an efficient “cavalry” cross-country armoured car: up to the present the half-track “auto-chenille” appears to be the most probable line of development.

Tanks.—There is little doubt that this type of mechanical vehicle has not reached the stage of development, nor will it be available in sufficient numbers, to be used on extended missions independently: tanks are too blind. They can however be a very useful help to cavalry, now that being sprung they can move fast across country. Tanks may be at present considered as a sledge-hammer which can be directed to a useful purpose by the quick all-round consciousness of cavalry assisted by aircraft and armoured cars. These expensive mechanical vehicles are being continually modified and improved: no nation is, therefore, going to be the first to spend vast sums on a mechanical arm which, unless used at once, may very soon be out of date and much inferior to the same arm created by a rival state a few months later. Indeed, the whole trend of present-day political effort is to cut down expenditure on armaments; and since it is realised that the most pressing and immediate danger on the

outbreak of war will be from the air, it is probable that in peace time, after assuring an adequate air force, money will not be available for the creation of mechanized armies; modern democracies are not going to stand the taxation that would be necessary.

It is probable therefore that the number of tanks that an army will possess on the outbreak of war will not be sufficient to allow of their being sent on long and adventurous missions unless the way has been prepared for them; rather will they be kept as a powerful and mobile reserve for use in case of emergency when the situation is clear, and where they may be expected to effect decisive results in a main issue.

Infantry in Lorries.—A lesson was learnt at the Home manoeuvres last September that the use of infantry in lorries is limited; they can move long distances rapidly when covered by other troops, but they are very vulnerable from the air: unlike the cavalryman's horse which is almost part of himself, a number of lorries are very conspicuous from the air, and are awkward to handle and to place at the point they may be required if a move is again necessary in face of the enemy.

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From the above it is argued that mechanical vehicles cannot carry out distant missions efficiently by themselves; but that cavalry in co-operation with aircraft and armoured cars, and supported on occasion by infantry in lorries and tanks, will form the mobile portion of an army for some time to come. The more broken and difficult the country the greater difficulties will there be for mechanical forces, both in actual movement and in maintenance, whereas good cavalry can work efficiently over almost any country.

The possibility of keeping touch in a large cavalry force, which must necessarily be scattered over a large area, and of at the same time keeping in touch with the general situation as it affects the main body of the cavalry force, as well as being able to bring the whole of this scattered but fast moving force of all arms rapidly and effectively into play when an opportunity for a concentrated blow occurs, depends on good, accurate, and quick reconnaissance and the very rapid transmission of information gained to Cavalry Force Headquarters, who must similarly be able to communicate orders accurately and rapidly to all subordinates.

This difficulty was experienced to a marked degree by Sordet's Cavalry Corps in 1914; again and again faulty information was acted upon causing much unnecessary marching and counter-marching; and, when a concentrated blow on a located enemy force was decided upon, the divisions of the corps lost touch and there was no proper co-ordination or cohesion. In reading the "Historique" of the actions of General Sordet's Corps one is continually struck by the inability to get information regarding the enemy forces owing to screens of machine guns, and the difficulty of bringing the corps as a whole into action effectively. This corps had of course an extremely hard task to perform, and the difficulty in getting information was increased by the fact that the Germans in Belgium had the strategic initiative and went ahead with their plans using their cavalry as a screen close in front of their main column; thus the German cavalry met by the advanced detachments of Sordet's corps were almost invariably closely backed up by infantry and guns; the fire power of the French cavalry at that time was very weak. General Sordet himself attributes his difficulties largely to his lack of armoured cars, and there seems little doubt that these would have helped him very materially, and would have made his corps a more closely articulated and supple whole. The aircraft that General Sordet had were of little use to him as his advanced detachments were operating beyond their radius of action.

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To sum up:—An endeavour has been made to stress:—

(1) That the first phase of the next European war will probably consist primarily of intensive mutual air attacks on aerodromes and aircraft, possibly beginning before war has actually been declared; that by the time mobilisation is complete and the strategic movement of forces has begun, the question of air superiority will to a large extent have been decided; and that for a large "independent" cavalry-cum-mechanical force to act strategically with success, it must be concealed and protected by its own aircraft from the enemy's air forces if these are still capable of extended offensive action.

(2) That the mobile detachments of an army for some time to come will consist of cavalry, aircraft and armoured cars.

(3) The necessity for the continual close co-operation and training of these arms if an efficient mobile force of any size is to take the field.

(4.j) The ever increasing importance to a mobile force under modern conditions of wide, quick and accurate reconnaissance, together with the ability to communicate accurately and rapidly throughout the force.

(5.) That the Tank appears to be essentially an arm for decisive use when the situation is clear, for pursuit, or for concentrated use for a smashing blow against a definitely located and to some extent fixed target, depending on its numbers, crushing power, armour and armament, and usually on artillery support, to achieve its object. Cavalry armoured cars must on the other hand be swift and silent, work in pairs or threes, and depend on their mobility rather than on armour for their security ; the co-operation of aircraft and of such armoured cars with cavalry is imperative against a civilised enemy, and would greatly increase its radius of action and offensive power in all conditions of warfare.

EXPERIENCES ON THE SOMME, JULY 1916.

(A lecture given at The Staff College, Quetta, 1925.)

BY CAPT. L. GILBERT, M. C.

[NOTE.—The narrative portion of this article is not based on any diary, private or official, absolute accuracy of detail is not therefore guaranteed. The main purpose is to give an impression of some of the difficulties of exploitation in certain conditions of warfare. The introductory paragraphs on the plan of battle are based on "Sir Douglas Haig's Command" by G. A. B. Dewar and Lt.-Col. J. H. Boraston, C.B.]

1. *The Allied Plans for 1916.*—Much of the criticism which has been levelled at the conception and conduct of the Battle of the Somme is based on the false assumption that the object of the battle was to achieve the break-through that should end the war. To give this battle its true perspective and to understand the proper scope of its plan one should study it in relation to the main events of the war up to the end of 1915 and note the revision of plans caused by the events of early 1916.

In spite of British efforts from Mons to Neuve Chapelle and Loos, and notwithstanding our operations in other theatres, the greatest burden had so far been borne by the French, and that on the Western Front. It was not until January 1916 when our fighting strength was approximately 460,000 (in June 1916 it reached 660,000), that we were in a position to afford substantial relief to the French. Whilst we were raising, training and equipping new armies, France was being drained of her best, and this even before the great battle of Verdun.

In December 1915 the Allies decided that general offensive should take place in 1916, not only in France, but also in Russia, and in Italy. On the Western Front the French, as the "senior partners," wished to play the leading part in this offensive, and therefore proposed that the main contribution of the British should consist of preparatory actions to exhaust the German reserves, and of relieving French troops by taking over more line. To put it plainly it was France's intention to allot a goodly share of the less glorious work to us, reserving large forces of her own

for the grand blow, and also, it has been suggested, to lend support to her voice at the Peace conference.

A lesser but very interesting object was to free the Albert-Achiet-le-Grand-Arras railway. (See Map No. 1.) If this were done it would have given us another important railway circuit running back through St. Pol, Frévent, and Doullens to Amiens.

Verdun altered these schemes. The preparatory operations executed by the British forces were limited to a series of raids, and the main object of the offensive in the West became narrowed primarily to the creation of a diversion from Verdun, and the using up of the German forces in the West to prevent their transference to other theatres. Thus the principal effort in the modified plan was allotted to the British. The front of attack was narrowed from 45 miles to 24 miles. The French employed 5 divisions in the front line with 11 in reserve instead of a total of 39 as originally planned, whilst the British opened the attack with 13 divisions in the front line and six in reserve instead of with a total of 25. Such were the immediate effects of Verdun, which profoundly altered the scope of the battle of the Somme.

2. *The Plan of Battle.*—The objectives in the original plan were, first, the French to gain the high ground South of Peronne to the East of the R. Somme, the British to gain the high ground on the Eastern side of which stand le Transloy, Bapaume, and Achiet-le-Grand, then, secondly, each to turn outwards, the French to operate South-East, the British North and North-East against the created flanks. The idea was to prick the bubble Arras-Fricourt-Maricourt. (See Map 1 and Diagram 1.)

The modified plan aimed at the British objective only, whilst the French, and cavalry, were to cover the right flank in the second phase. The object was, as described in the Despatches, threefold—

- “(i) To relieve the pressure at Verdun.
- “(ii) To assist our Allies in other theatres of war by stopping any further transfer of German troops from the Western Front.
- “(iii) To wear down the strength of the forces opposed to us.”
(The Official Despatches, Vol. VII, p. 7.)

At the outset the first of these objects was of primary importance, for it was the urgent necessity of relieving the pressure at Verdun which determined the date for opening the battle. The second object was also of great importance at that

time, for we now know that in June 1916 Brusiloff's brilliant success in the East had made the Germans apprehensive of the security of the Eastern Front. As a matter of fact the Austrians were already shouting for help. In the light of these two objects the battle of the Somme is one of the greatest counter-strokes of the war. When the first object had been achieved and it was realised that the geographical objectives could not be reached according to plan, the third object became of primary importance and the battle was continued as a "wearing out" battle.

In studying any military operation it is necessary to distinguish between object and geographical objective. The objects of the battle of the Somme were almost completely achieved. Within a month the Germans had to break off their offensive before Verdun and the French were enabled to regain much of the ground which had been lost.

With regard to the second object, some divisions, it is true, were transferred during the battle of the Somme to the Roumanian Front. Falkenhayn in his "General Headquarters, 1914—1916, and its Critical Decisions," says (p. 286): "The Western Front was in a position to furnish the bulk of the troops required to deal with the Roumanian menace." Ludendorff in his "My Memories" (Vol. I, p. 248), writing of the Roumanian attack and the plight of the Army Group of the Archduke Charles says: "The concentration against Roumania was deferred. Not a single man more could be spared from the Western Front." The truth probably lies between the statements of the new broom and the old broom.

As for the third object, at one period, Germany's available reserves on the Western Front were reduced to five divisions of which two had already been heavily engaged.

The objectives were not completely attained. In battle they are frequently not attained according to plan. After all they are but the geographical handmaids to the main end, namely, the destruction of the hostile forces. The purpose of this narrative is to show the bearing of some of the tactical operations on this failure.

3. The 17th Division. Its Experience, Training, Organisation and Armament.—Early in 1916, in preparation for his share in the coming offensive, Sir Douglas Haig began to train reserves in each of his three Army areas. The 17th Division, which had

landed in France in the summer of 1915, had done its apprenticeship in the Ypres Salient. In March 1916 it was transferred to the Armentières Sector, where for the next two months it was mainly engaged in reconstructing the lines so that these could be held by fewer troops located in posts instead of in a continuous trench. About the end of May it was withdrawn for training to an area South-West of the Eperlecque Forest (about eight miles N.-W. of St. Omer). The conformation of the ground hereabouts with its succession of low rounded ridges is similar to that of parts of the Somme battle area, a fact which doubtless influenced its choice as a training ground.

An outstanding feature of this training was the practice of a new formation called the "wave formation." This was an early, if not the original stage of what came to be known later as the normal formation for the attack. It was designed to deal with successive lines of trenches and to give depth and weight to the attack. Diagram 2 shows a battalion deployed in wave formation on a two company front. The leading companies are deployed into two pairs of lines with two platoons in each pair. Each pair of lines was considered to form a whole for which the term "wave" was used. The distance between the lines of a wave was from 15 to 20 yards, that between the first and second waves from 50 to 100 yards. The platoons had two complete sections in the first line and two in the second line. The rear companies followed the second wave at about 200 yards distance at first in artillery formation of platoons, then in artillery formation of sections, and finally, if used for assault or if under effective small arms fire, in waves. The frontage of a platoon was 100 yards, so that the men were extended to about six paces.

An elaboration of this formation, incorporating the lessons of the Somme fighting, was published early in 1917 in an official pamphlet entitled, "The Organisation of an Infantry Battalion and the Normal Formation for the Attack." The chief of these lessons were:

- (i) The necessity of allotting definite objectives to each wave, so that a battalion should be deployed into as many waves as it had objectives.
- (ii) The need for some means of neutralising the action of surviving hostile garrisons in trenches which had to be crossed by the leading waves on their way to more distant objectives. This was met by detailing

"moppers-up" to follow immediately behind the leading waves.

- (iii) The need for weapon units to work as teams. This led to an organisation of sections according to their weapons and tasks. After the battle of the Somme platoons were organised into two rifle sections, one Lewis Gun Section, and one section of Rifle Bombers.

For consolidation also a more or less normal system was practised. This was, to dig a line of resistance covered by small posts at a distance from it of from 50 to 100 yards. The line of resistance consisted of separate "Z" or "dog's-leg" trenches for each platoon, and from which all-round fire could be used. The covering posts were boomerang-shaped section trenches which were christened after the Divisional Commander, "Pilcher's Grouse Butts."

The pre-war F. S. R. definitely forbade the use of normal formations, but during the war it was recognised that formations are affected by the state of the troop's training as well as by the tactical situation and the ground. Wellington's veterans, for instance, could use the two-deep line whilst Napoleon's half-trained conscripts used the column. Thus in the Great War normal formations were an expedient for rapid training by means of patterns instead of principles. The danger lies in their unintelligent application.

Towards the end of June the Division moved to an area North-East of Amiens, where the crops restricted training in large bodies. Here a few men in each platoon were trained in the use of the rodged Mills grenade which was at that time the latest pattern rifle grenade. A system of intensive digging was also practised. This consisted in dividing a working party into two reliefs. The shovelmen worked in two-minute reliefs and the pickmen in three-minute reliefs. The neighbouring woods were utilised for training in wood-fighting.

The final touches were in battle organisation. Signallers, runners, men with wire-cutters, and Lewis gunners were decorated with coloured armlets. Company Commanders were to carry a pocketful of spare red tapes with which to mark emergency runners and so prevent their apprehension at the stragglers' posts. The only inconspicuous soldier was the rifleman, and this was in a way prophetic. During the battle, the expenditure in S.A.A., including that of Machine Guns and Lewis Guns, was exception-

ally small. That was one effect of trench warfare; the bomb eclipsed the rifle.

Before leaving this area Company Commanders were given an opportunity of seeing the ground over which they would have to advance. This preliminary reconnaissance was carried out from the high ground about a mile and a half out of Méaulte on the Méaulte-Bray road. From there they were able to identify conspicuous points in Fricourt (most of which were rendered unrecognisable by the subsequent bombardments), the roofs of Contalmaison, and a tall chimney, probably the Sugar Refinery at Courcellette near the highest point of the ridge.

In organisation efforts were principally directed to the establishment of the platoon as a battle unit. Prior to training for the Somme platoon was a name rather than a reality. This was due to various causes. The four-company, and with it the platoon organisation, had been introduced only a short time before the war, and it was natural when there was a shortage of officers, that the old system of command should be resumed. Moreover, reinforcement officers from the Special Reserve and from the O.T.C., had little experience of the new organisation; and in general, the effect of trench warfare, coupled with very heavy casualties in other ranks, resulted in the company being regarded as *the* subordinate tactical unit. Thus in early 1916 a battalion consisted of four companies and a number of specialists under the direct control of the Battalion Commander. (This was the origin of the modern Headquarters Wing). Battalion Headquarters was a heterogeneous collection of warriors that often outnumbered in strength any one company. Of these specialists the most important, or so they were then regarded, were the Battalion Bombers, who by the end of 1915 had been formed into a separate platoon.

In 1915 the Machine Guns were withdrawn from Battalions and Machine Gun companies were formed. This expedient for the more rapid training of Machine Gunners was made possible by the introduction of the Lewis Gun which was first issued on a scale of four per Battalion. In 1916 Battalions fighting on the Somme were issued with two per company, and by the beginning of 1917 many units had one per platoon. The present Home Establishment scale was not reached until the summer of 1918. In the first instructions on its tactical use the weapon was treated as a company weapon. The realiz-

ation of the platoon as a definite unit on the field of battle may be dated from the grouping of the unit round the platoon weapon. Hereafter in official instructions the Lewis Gun is treated as a platoon weapon. The Germans on the other hand always used their light machine guns as company weapons.

The 17th Division entered the battle armed with two Lewis Guns per company. A sort of perambulator was provided for their transport. The bombers still formed part of Battalion Headquarters but during our first withdrawal for rest and reinforcement they were redistributed to companies. After that the only weapon at Battalion Headquarters was the Stokes Mortar. As the battle progressed, the semi-open nature of the fighting, the Lewis Gun, and the rifle grenade tended to diminish the importance of the hand grenade, but even then the hand grenade still eclipsed the rifle.

4. *The rôle of the XVth Corps.*—The XVth Corps consisted of the 7th, 21st and the 17th Divisions. Its objective on the 1st July was the enemy's first line system from Mametz inclusive to La Boisselle exclusive. The method of execution as originally planned was to attack with two divisions, one on either side of Fricourt, so as to "pinch out" the garrison of the latter place. The 7th Division was to attack on the right against Mametz and up to the East side of Fricourt, the 21st from the North side of Fricourt up to La Boisselle. Some few days prior to the attack doubt was expressed as to whether the plan was feasible with respect to the immediate North side of Fricourt, so the 50th Brigade of the 17th Division was hastily attached to the 21st Division to attack that North-West corner of that village. The mine craters prevented a direct attack to the East.

5. *Narrative.*

(a) *July 1st.*—The attack succeeded on the whole of the 7th Division front and on the left of the 21st Division. Before the North-West corner of Fricourt it failed with heavy loss. The reasons for this were:—

(i) *The ground.*—Diagram 3 shows the ground just West of Fricourt in section from North to South. The 7th Division being defiladed by the slope of the ground from machine gun fire from Fricourt went on successfully to the capture of Mametz. The right of the 21st Division and the 50th Brigade were

caught on a glacis slope and suffered terrible losses. Actually a whole battalion of the 50th Brigade was practically wiped out by machine gun fire from behind the mine craters, with the result that no troops got into Fricourt to mop it up on the 1st July. The lesson of this is that pinching out operations have little chance of success against localities from which machine guns can fire with impunity on the "Pinchers."

- (ii) There was insufficient artillery support for the 50th Brigade as the artillery plan was based on the assumption that Fricourt was not to be directly attacked. This shows how difficult it is to ensure that the whole plan shall conform to last minute changes. In any case the nature of the ground would have seriously affected the pinching out operation as originally planned unless adequate arrangements had been made to neutralise the defences of Fricourt. This incident is an instance where gas may be usefully employed against such bastions.

(b) *July 2nd—4th.*—The total gains on the British Front on July 1st are shown on Map 2. Elsewhere, that is from Ovillers-la-Boisselle to Gommecourt the offensive failed. The original plan for the capture of Pozières Ridge (the dark patch on Map 1) was to turn it from the West by attack from the direction of Thiepval. Sir Douglas Haig now determined to attack it from the South-East, from the valley running East and West to the North of Montauban and Fricourt wood, selecting for immediate objective the second German system from Longueval to Bazentin-le-Petit, on the Southern slope of the ridge. In order to concentrate the IVth Army on this operation the Army front was shortened by bringing its Northern boundary just South of La Boisselle. The Vth Army, which had been in reserve, took over the front from La Boisselle to Serre to carry on a holding attack. On the IIIrd Army front the attack was discontinued.

Apart from a redistribution of artillery and numerous administrative arrangements, two tactical preliminaries were necessary before this change of plan could be put into operation.

- (i) The filling in of the gap between the 7th and 21st Divisions in the Fricourt "corridor."

- (ii) The capture of localities such as Trones, Bernafay and Caterpillar woods and the area Mametz Wood-Contalmaison.

(The remainder of the narrative is from the point of view of a Company Commander of the 10th Foresters.)

The first of these tasks was allotted to the 17th Division (50th, 51st and 52nd Brigades). On the night July 1st/2nd, the 51st Brigade, (7th Lincolnshire Regiment, 7th Border Regiment, 8th S. Staffordshire Regiment, 10th Sherwood Foresters,) moved up to our old front line West of Fricourt. The next morning the Brigade deployed as follows:—

| | | | |
|---------|-----|-----|----------------------|
| Right | ... | ... | 7th Lincolns. |
| Left | ... | ... | 8th S. Staffords. |
| Support | ... | ... | 10th Foresters. |
| Reserve | ... | ... | 7th Border Regiment. |

"D" Coy. of the Foresters followed the Lincolns, the rest of the battalion was behind the Staffords. At about 9 A.M. on July 2nd, this company deployed from our old front line in artillery formation of platoons. There was no shelling on either side, due, on the part of the enemy to his withdrawing his guns, on ours to the fact that it was now known that the enemy had abandoned Fricourt. Early that morning a gunner officer of the 21st Division had observed a British sapper officer moving about the near side of the village. The information was received in time to prevent a waste of ammunition on the abandoned defences.

On reaching the village the company received orders to move to the left and report to O. C. Staffords. The approximate positions of the forward units at this time were as follows (See Map 2):—

Lincolns.. about the line of Cottage Trench.

S. Staffords...in the Eastern part of Lozenge Alley with their right about 100 yards West of Fricourt Farm and with some troops in Lonely Support.

Foresters ...in Lonely Trench and to the West with "D" Coy. about the word *Lonely* of Lonely Support.

The Staffords had cleared Lonely Trench and Lonely Support and that part of Lozenge Alley between the Farm and the right of the 21st Division. They were now held up by the enemy holding Crucifix Trench and The Poodles. Just West of

Fricourt Farm was a mound from which one could look into Railway Alley but not into Crucifix Trench or the Poodles. Railway Alley was filled with enemy troops and both it, the Poodles and Crucifix Trench were protected by a single wire fence. The continuation of Lozenge Alley running through the Farm to the East was unoccupied. Enemy sniping prevented continuous observation from the mound.

The situation appears to have been this. The Staffords and the Lincolns, separated by Fricourt Wood were out of touch. O. C. Staffords therefore ordered "D" Coy. Foresters to reconnoitre the wood with a view to gaining touch with the Lincolns and of ascertaining whether there were any enemy in the wood. This order was received at about 2 P.M. A platoon was accordingly sent into the wood from the West side with orders to make for the East side, to report immediately the location of the first troops of the Lincolns met with, or of any enemy encountered, and to remain in touch with either or both. The remainder of the company was then moved up to the West side of the wood.

After about an hour the Platoon Commander sent back a runner for the Company Commander. He had come across a trench, not marked on our maps (marked B-C on Map 2), running just inside the Northern edge of the wood. So far he had encountered no enemy. He had searched a large dug-out and found many good things but no Germans. He had seen none of the Lincolns but he had not yet been to the East side of the wood. He was ordered to remain in observation where he was and to watch especially the trench running from the wood to the West end of Railway Alley. (Point A on Map 2 is on this trench.) As it now appeared that the Lincolns must be well on the Eastern side of the wood the rest of the company was brought in to fill the gap between the Staffords and the Lincolns by occupying this trench. Shortly after dusk touch was made with the Lincolns at the re-entrant about Point B. The enemy had erected a bomb stop in the trench connecting the wood with Railway Alley at Point D, so at night trench tactics were once more to the fore. During that night some of the wire opposite us was cut in old fashioned way, that is by a valiant party of infantry with wire cutters. That night too "A" Company of the Foresters was trickled into the unoccupied part of Lozenge Alley from Fricourt Farm to a bomb stop at Point E, but no information of this move was sent to "D" Company until the morning.

Throughout the day there had been no shelling on this part of our front. Our casualties, which were not heavy, were from machine gun and rifle fire and some few from bombs. The result of the day's work was that the Brigade had reached the following line: on the right, the Lincolns from about Valley Trench to the North-East corner of Fricourt Wood, thence along the North edge of the wood from Point A to Point B; in the centre, "D" Company Foresters on the North edge of the wood from Point B to Point C, and later "A" Company in Lozenge Alley from Point E up to the West of the Farm; on the left the Staffords; the Border Regiment were in reserve, probably in Fricourt. The enemy remained in possession of Railway Alley and Crucifix Trench. Considering that the enemy had previously evacuated both the village and the wood, and there was no hostile artillery fire, by a hasty judgment the advance would be considered slow. But reflect on the actual situation as it must have appeared at the time. The information that the village had been abandoned was received very shortly before the advance began. The absence of enemy artillery fire could hardly have been anticipated, and it was not known whether the wood was still held. At the time in spite of our bombardments the greater part of the wood was still standing and owing to fallen branches and to undergrowth it offered an obstacle to infantry moving off the rides. Such an obstacle, whether one moves on either side of it or through it, is bound to slow up an advance and increase the difficulties of inter-communication. Had there been an advanced Brigade Headquarters, capable of receiving more information than could be got in time at either of the leading Battalion Headquarters and so of estimating the general situation on the Brigade front, the pace might have been forced.

Early next morning the Stokes Mortars came up to "D" Company Foresters and took on the bomb stop at Point A. Under cover of this diversion the left platoon of the company was sent over the top into what was thought to be the empty trench just East of the Farm. They got in without a casualty and attached themselves to "A" Company. The object of this move was to give the left a better jumping off for the Poodles and to keep the garrison of that trench occupied during the advance of the remainder of the company against Railway Alley. As noted above this trench had been occupied during the night and no information conveyed to "D" Company until the morning. The lesson of this incident is the necessity for Battalion Headquarters to

keep its companies promptly informed of all movements affecting them, and not to assume that subordinate commanders will discover such things themselves.

The Adjutant brought verbal orders during the morning for an attack, at an hour to be notified later on Railway Alley, the plan being as follows: Right, the Border Regiment; Centre, the Lincolns; Left, the Foresters. The latter employed three companies, "C" Company, being brought in on the right of "D" Company, and "B" Company was kept in battalion reserve.

The attack started from the wood at 4 P.M. on July 3rd, Machine gun and rifle fire was heavy and the leading wave of "D" Company halted in a slight depression about 40 yards from the Alley. The second wave halted in the same place, but the men only wanted a breather, and when they advanced again the enemy bolted towards Crucifix Trench pursued by a mixed party of Lincolns and Foresters. "A" Company Foresters were now just emerging from their trench by the Farm and as their bayonets appeared a party of Germans came out from the Poodles to surrender. They were quickly surrounded, and were sent off in batches of about 30 with an escort of 2 to each batch. Amongst the prisoners were five officers including the Battalion Commandant who excused his surrender on the ground that he was surrounded. When this was explained to the O. C. Foresters who had just come up, he slapped Herr Major heartily on the back and said: "Never mind old cock, you put a good fight." The prisoners totalled about 400.

There were no enemy now to be seen in Railway Valley, and only a few stragglers on the opposite hillside making for Contalmaison. On the right the Border Regiment were approaching Bottom Wood; the hostile guns were still silent; but an order to erect bomb stops in the communication trench running down the hill from the Poodles to Railway Copse prevented the leading units of Foresters from advancing at once. That order was later cancelled but it was past dusk before two companies of Foresters marched in fours across Railway Valley and up the opposite hill to the hedgerow between Bottom and Shelter Woods, to dig in. This move seemed a pity. The men's tails were up; there had been few casualties. But there it was, behind the hedge they dug their "dogs' legs," in front of it their "grouse butts" as comfortably as they'd dug on the pleasant ridges by Eperlecque Forest.



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The result of this day's work was thus an advance of about 1,000 yards from the line of Valley Trench, Fricourt Farm, Lozenge Alley to the line of the Northern edges of Bottom and Shelter Woods, and the capture of some 400 prisoners. The reasons for limiting the advance could not have been due to difficulties on the flanks. Map 2 shows that on the left Peake and Shelter Woods had been reached on the 1st whilst on the right we held a part of Valley Trench and Caterpillar Wood was being attacked. If Divisional Headquarters had received the necessary accurate information in time the advance would doubtless have been continued that evening up to Quadrangle Trench. But it appears that information was so slow in arriving that it was impossible for them to act in time. The following description of this fighting in the Despatches shows how differently from the actual the situation was envisaged in the rear:

"During the succeeding days the attack was continued ...In spite of strong counter-attacks on the Bricqueterie and Montauban by mid-day on the 2nd July our troops (17th Division, Major-General T. D. Pilcher) had captured Fricourt and in the afternoon and evening stormed Fricourt Wood and the farm to the North." (Official Despatches, Vol. VII, p. 12.)

Heavy rain fell during the morning of the 4th and our trenches were soon over the ankles in water. All was quiet save for an occasional sniper's shot from Quadrangle Trench which made the occupants of the grouse butts lie low. Back in the dogs'-legs we were in defilade, and the men stood out of their trenches huddled under their water-proof capes, stamping about to keep warm. Now and again the alarming message would be passed from the right, "Stand to for counter-attack." This went on throughout the day, but no counter-attack ever came, nor a single German shell. Thus the enemy was given another day's respite. Late that night the 52nd Brigade relieved the 51st.

(c) *July 7th—10th.*—After a day and a night's rest the battalion marched early on the 7th to Fricourt, and halted for about an hour in the old No Man's Land to the West of the village. There was considerable artillery activity on both sides. In the companies we had little information except that the 52nd Brigade had captured Quadrangle Trench whilst we had been resting, but so far there was none about the plans for the day. Presently "C" and "D" Companies were ordered into Railway Valley where further orders would be given.

"D" Company got into artillery formation of platoons between r'ricourt Wood and the old 21st Divisional boundary, and then moved North-East between the Farm and the South-East corner of Shelter Wood. As the leading platoons crossed Crucifix Trench the ground scouts halted. Right ahead a cloud of shell smoke hung about Contalmasion and Mametz Wood. Just below, the South side and the bottom of Railway Valley were being pounded by the enemy's guns; few shells were falling on the North slopes. The platoons doubled across the valley and halted on the far side. They got through without a single casualty. On the right "C" Company had bad luck, one platoon, being tempted to move into the valley by way of a communication trench, had several casualties. On reporting position to Battalion Headquarters somewhat impatient orders to push on were received. Presumably we were meant to make for Quadrangle Trench, but orders were by no means clear that morning. Whilst yet in artillery formation of platoons we reached Quadrangle Trench just to the West of its junction with Bottom Alley, where we learned that this was still our front line and that the 52nd Brigade's attack on Quadrangle Support had failed.

Quadrangle Trench at this time was nothing but a wide ditch; almost every traverse had been destroyed. Soon after our arrival the German guns turned on to it and maintained a steady bombardment, at times intense, throughout the day. In spite of their knowing as they must have done, its exact location, they scored very few hits, and there were less than 10 casualties in each company from shell fire whilst actually in the trench. Signallers from Battalion Headquarters ran out a wire and the first and only message we got over it, for it was being constantly cut, ordered us to relieve the units holding the trench. This took some time as the attacking units had few officers left and were somewhat confused and without orders. The last party filtered out during the afternoon and we occupied the trench from its junction with Bottom Alley to Point F. The stretch running North to Contalmasion was for the most part untenable. It was enfiladed from the village and its parapets gave little protection as the trench floor was raised with corpses. A bomb stop had been erected at Point F. The reserve companies were moved into the dogs'-legs. Battalion Headquarters were in a dug-out in Railway Copse. During the day our stretcher-bearers were busy clearing our own and some of the casualties of the 52nd Brigade. It was a long carry, about 1,400 yards to the R.A.P. near Railway Copse and the going was

incredibly sticky. The Brigade appears to have been disposed with two Battalions forward, the Lincolns on the right and the Foresters on the left with Bottom Alley and Bottom Wood (both inclusive to the Lincolns) as inter-battalion boundary.

About 8 o'clock on the evening of this day, the 7th, a message from Battalion Headquarters was passed on from "C" Company to "D" Company Commander who was in command in the front line. Quadrangle Support was to be attacked at 8 o'clock that evening. The reserve companies were being sent up and placed at our disposal. We looked at our watches: it was already 10 minutes past 8. Then a sentry shouted out that "C" Company were advancing, and almost at the same time the leading platoons of one of the reserve companies arrived. "D" Company Commander ordered two Platoon Commanders who were with him at the time to attack at once alongside "C" Company, and sent for the others to follow as a second wave. The reserve companies were to occupy Quadrangle Trench and be prepared to advance in support.

From our position in Quadrangle Trench, Quadrangle Support was hidden by a slight rise and we could only just see the remnants of the trees of Acid Drop Copse. As we topped this rise we were met by heavy machine gun fire from Contalmaison, and possibly from Pearl Alley also. We were badly bunched in the middle as the troops on the right were heading for Pearl Alley. After an unsuccessful attempt to cross the rise we withdrew to rally on our side of it. Stiffened by some platoons of the reserve companies we made another effort, but the enemy's artillery fire was now intense and we failed again. We hung on to our side of the rise for a while, platoon commanders now and then trying to push forward, but they were shot down as they topped the rise. No signs of advance could be seen on either flank, and as our casualties appeared to be heavy an order was given to withdraw to Quadrangle Trench. It rained heavily during the night and although we were relieved by about 11 P.M., it was daylight before we came to rest in trenches just South of Fricourt.

Throughout the 8th and 9th the enemy kept Fricourt and the wood under fire. In our area the shell were mostly lachrymatory. On the night 9th/10th the Battalion moved up again to the dogs'-legs. Our task was to support the Staffords in a night attack on Quadrangle Support. Immediately they advanced from Quadrangle Trench we were to move into it and be prepared to take over Quadrangle Support after its capture. This attack failed on

the right of the Divisional front, and the Staffords, who had got a footing in Quadrangle Support, had to be withdrawn through the Foresters.

During the next day, the 10th, a sharp look-out was kept on the support from an officer's O.P. near the rise. The enemy artillery fire slackened off during the afternoon, and that evening we advanced on to the trench. We had been given time to prepare for this advance and had previously pushed all our available Lewis Guns out on to the flanks on the rise. The enemy artillery fire was neither intense nor accurate, and we were met by some small arms fire from the front only. Shortly before we advanced troops of the 23rd Division could be seen advancing on the left on Contalmaison, and during the afternoon movements on the right against Mametz Wood were reported by the O.P. What was left of the garrison of Quadrangle Support bolted in the direction of the North end of Mametz Wood, and we settled down to consolidate the trench after sending out patrols. That night we were relieved by a Territorial Division and withdrawn for a blessed fortnight to rest and absorb reinforcements.

6.—*General Lessons and Summary.*—This fighting in the neighbourhood of Mametz Wood had an important bearing on the second phase of the battle of the Somme. Map 1 shows the location of the three German systems as they existed in June 1916. At that time the third was incomplete. The British objective, the high ground Le Transloy-Bapaume-Achiet-Le-Grand lies just to the East of it. One condition of the attainment of this objective was the capture of this third system before it should be strengthened and organized; before the Germans could throw in sufficient reserves to man it; and consequently before our own reserves had been absorbed in storming formidable trench systems and whilst we had in hand sufficient troops to operate in the open country beyond. The first day's fighting had resulted in General Gough's Reserve Army, known by us as the "Army of Pursuit," being sucked in to the battle. But by the evening of that first day the enemy's first system on the British Front from Maricourt to La Boisselle was in our hands. By July 5th advanced posts of the second system such as Bernafay and Caterpillar Woods had been captured. By the same time the reduction of La Boisselle covered the left for further advance in this part of the battle field. But before an attack could be launched against the second

system we had to get possession of the area Mametz Wood-Contalmaison, an outpost which for a time served the Germans much as Hougoumont Farm served the Allies at Waterloo. The first attacks on this area were made on July 7th by three divisions, but it was not until July 10th that this outpost passed into our hands. The delay not only enabled the enemy to strengthen his second system but also gave him time to improve his sketchy third system, with the general result that we did not reach the latter until September 16th nor completely occupy it until October. The weather then made operations on a large scale impossible and by that time too the dream of open country beyond had been shattered.

Although this failure may be ascribed directly to the delay in front of Mametz Wood, an examination of the ground as shown in Map 2 brings out the tactical difficulties presented to the attack, in the area Mametz Wood-Contalmaison. The wood and the village stand on spurs separated by a slight valley which afforded little if any cover from the localities on either flank. Whatever the direction of the attack there was bound to be a desperate struggle for the possession of the wood. Troops advancing on the East of it would soon come under fire from the enemy second system running North-West from Flatiron Copse. Successful advance West of the wood involved possession of or at least simultaneous attack on Contalmaison; and such appears to have been the general plan of attack.

On July 7th our line ran along Quadrangle Trench to Point F, thence through Peake Woods to Bailiff Wood. Thus advance against Contalmaison involved frontal attack from the West, and this was combined with advance East of the village on Acid Drop Copse and Quadrangle Support. The Division on the left got a footing in the village but was unable to remain as no progress was being made East of it. Similarly the Division on the right was unable to make progress against Mametz Wood from the South. It is suggested that if the successes of the 17th Division on July 3rd could have been exploited by the seizure of Quadrangle Trench on the same day, then Quadrangle and Wood Supports might have been captured on July 4th before the enemy had re-distributed his artillery, and the flanking localities might have fallen by July 7th thus enabling the main attack on the German second system to be delivered a week earlier. But speculation on might-have-beens is of little value except to measure the consequences of mistakes.

The chief lessons of the actual fighting are :—

(i) *The importance of good orders, messages, and information, and all with relation to the time factor.*—The system of inter-communication within battalions and brigades needs to be constantly practised. An officer who issues an order during an action must consider whether it can reach its destination in time to be carried into effect. It is specially important to consider the time factor in making fresh plans for a fresh attack when the original attack has failed. The first attack on Quadrangle Support failed on the morning of July 7th. A fresh attack was ordered for 8 o'clock in the evening, but as shown above the order did not reach the front line in one case until after zero hour. In this instance the calculation of the time factor was largely upset by weather and mud. The memory of the state of the ground between Fricourt and Contalmaison is very vivid. It wasn't that we weren't used to mud, but this was glue. The reason was that the chalk and lime in the soil hereabouts once it was churned up by shell fire and sodden with rain, set hard as it dried.

Similarly information which is sent back must be both accurate and timely. The reports of the fighting North of Fricourt on July 2nd, 3rd, and 4th seem to have lacked accuracy and to have travelled slowly. Headquarters in the rear cannot take effective action on such information.

(ii) *The need for Headquarters to keep right up where they can feel the pulse of the fight.*—It has already been suggested that an Advanced Headquarters might have forced the pace on July 2nd, in spite of the delay bound to be imposed by Fricourt Wood. Again, on July 4th, had the front been reconnoitred by a staff officer, it is possible that his report would have resulted in the 51st Brigade being ordered to continue the advance against Quadrangle Trench before being relieved by 52nd Brigade.

(iii) *Artillery Support.*—Owing to ignorance of the artillery arrangements the writer is not qualified to make any observations beyond noting the difficulties of inter communication between the forward troops and the supporting artillery. Some difficulty, for instance, was experienced in getting our artillery to stop firing on Railway Alley after its capture. Again on the evening of July 7th during our abortive attack on Quadrangle Support we had no direct means of asking for artillery to be concentrated on to Contalmaison and Pearl Alley whence came the Machine gun fire which was largely res-

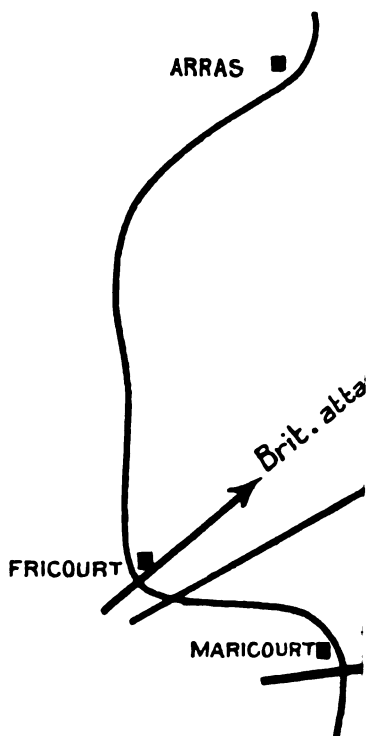


DIAGRAM 1.

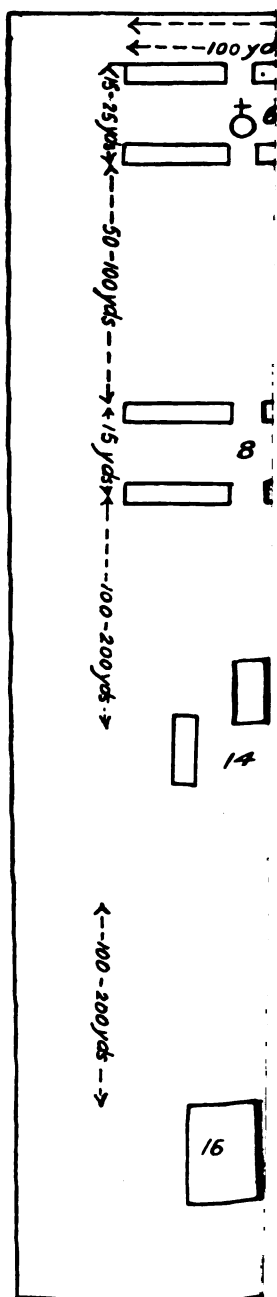
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DIAGRAM



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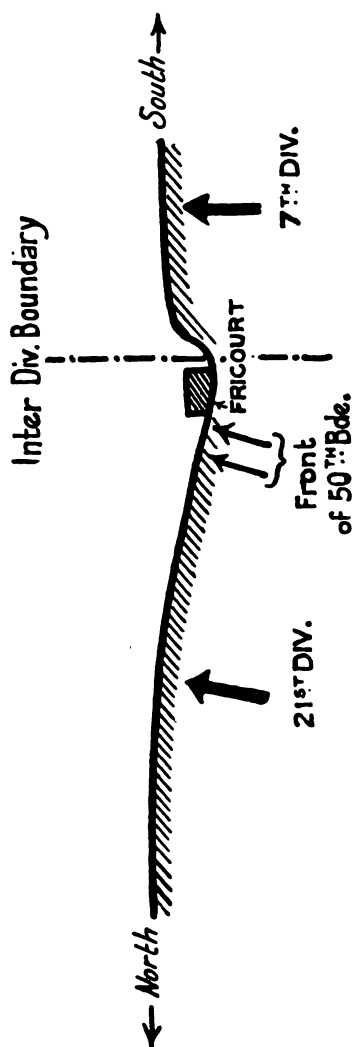
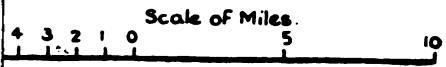


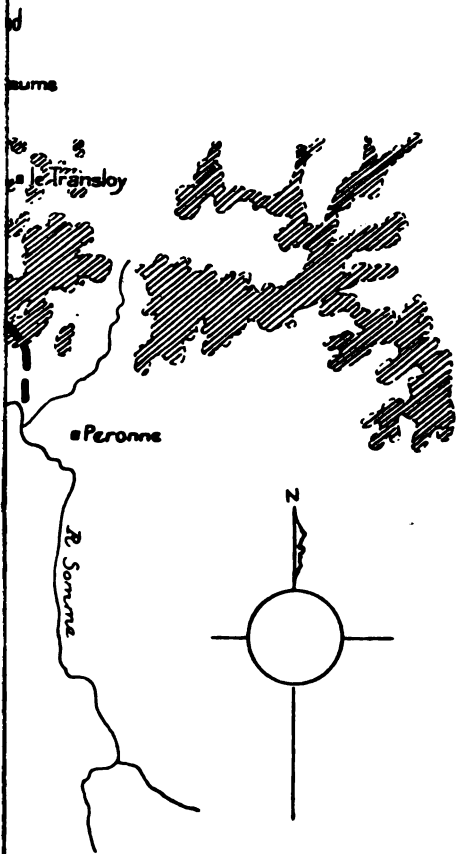
DIAGRAM 3.

MAP 1

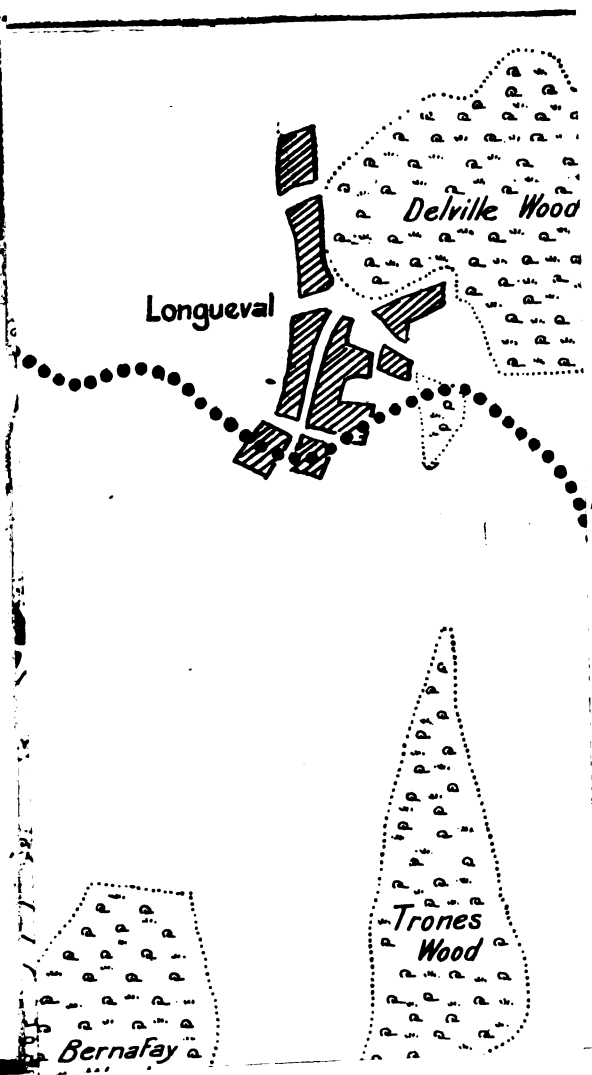
OF THE SOMME JULY 1916.



Cambray ■



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possible for our failure. At the same time it must be remembered that at the time of this battle inter-communication between infantry and artillery was not highly developed. And although great progress has been made since those days, getting the artillery to destroy or neutralise what is at any particular moment holding up the advance on a certain part of the battlefield still remains a most difficult part of the art of war.

The Germans also had their artillery difficulties. The trench map showed that their gun positions (not marked on the accompanying maps) for the defence of the first system were mostly in the valley running North of Montauban and Fricourt Wood. During the withdrawal these guns had to be moved either right over the Courcellette Ridge or placed in exposed positions on the forward slope. The absence of hostile artillery fire on July 2nd, 3rd and 4th suggests that they took them right back and all at the same time. Compare Art. Training, Vol III, (1921), Section 93, para. 7, and F. S. R., Vol. II (1924), Section 110, para. 3.

(iv) *Training*.—From this review of the first phases of a part of the battle one may draw this conclusion. Failure to exploit a local success was one of the causes of our being robbed of the timely attainment of the geographical objectives in the second phase. This was in no way due to lack of courage and grit on the part of the troops. All the lessons which have been deduced may be summed up in the words training, the training of a nation in arms. Men can't be trained in five weeks nor their leaders in six months. The problem, which is peculiar to the British Empire, is not yet solved. Conscription in peace time is not practicable, and the Territorial Army is but a partial solution.

Finally the preparation of this paper has brought home to the writer the truth of F. S. R., Vol. II (1924), Section 3, para. 3, "Impressions produced from actual experiences are more vivid and lasting than those resulting from study. But as the scope of experience, however wide and vivid, is limited, the tendency to attach undue importance to these impressions must be guarded against. To make sound deductions from experience, reflection and comparison are necessary." That is, briefly, one's experiences of active service are of little value unless reinforced by a study of war as a whole.

NOTES ON THE SAND MODEL.

(By *Lieut. I. T. P. Hughes, M.C.*)

The value of the Sand Model has from time to time been extolled, but its uses are still but little appreciated.

Training and Manœuvre Regulations [Chap. II., 15(9)] deals briefly with the subject and suggests a method of improving a table. A proper table, however, costs so little and is so far superior, that every Battalion Training Cadre and, if possible, every company as well, should be in possession of one. The cost of these can usually be defrayed by the Training Grant.

The dimensions of the table should be about 7' × 5' with the sill of 6 to 8 inches.

The longer sides should have 10 diagonal slits about 1 inch deep cut in. Into these, numbers giving the scale, can be inserted. This ensures that all know the approximate distances and prevents a great many impossible movements.

Three scales will normally suffice :—

- (1) In multiples of 50 yards—Large Scale. Used for elementary work where the movement of individual men is shown.
- (2) In multiples of 100 yards—Medium Scale. The most useful scale for all section work.
- (3) In multiples of 150 yards—Small Scale. Used for more advanced work including Platoon Schemes.

The models should vary according to the scale used. Three sets will, therefore, be required. A cupboard mess 1/1 is a useful thing for keeping these and other requirements in.

It is, of course, quite impossible as well as entirely unnecessary to make the models strictly to scale.

The height the table should be from the ground is the next consideration. This will depend on the height of the seats. Quite a satisfactory model can be made by a rectangle of four boards placed on the floor and filled with sand. The two chief disadvantages of this are—

- (1) It is impossible to move the model and a special room will probably have to be devoted to the purpose.

- (2) Men get a birds eye, and, therefore, an unreal view the ground.

This latter disadvantage will always be met with in Sand Models, but will not affect their usefulness provided it is always borne in mind that sand models are intended to supplement not supplant study on the ground.

The position of the Sand Model must now be decided. If it can possibly be arranged, a separate room should be set aside. This prevents interference and allows the model to be prepared at any time before it is required, without the men seeing it. The room should be adequately lighted and capable of being easily darkened. If it is centrally situated and adjoins the lecture room so much the better.

Over-elaborate models are unnecessary, but the more realistic the model is made the more interest the men will take in the work carried out.

A few explosions will add to the realism of the scheme. These are prepared beforehand and should be placed under prominent features or important buildings. They can be made as follows:—

Requirements—One electric accumulator or battery.

A few yards insulated wire.

A few inches of thin wire as used for floral decorations.

Gun powder.

Lay a double wire under the Sand Model—the two ends, which must be bared for about an inch, to rest under the place where the explosion is required. Keep these two ends apart by placing a small wedge between and bind so that they stick out like the prongs of a fork. Connect these two with one strand of thin wire. This should then be placed in a small receptacle containing about half a tea-spoonful of gun powder. It is necessary to ensure that powder is touching and all round the thin wire. Cover up with sand.

On connecting the other two ends to the battery, the thin wire will become red hot and the powder explode.

Any number of wires can be laid and the explosions fired by means of a simple switchboard.

After each explosion the bared ends of the wire must be cleaned and polished and it is essential that the powder be

absolutely dry. For this reason explosions should not be laid till a short time before they are required.

The representation of enemy small arm fire is a difficulty. Short barrelled revolvers let into the side of the table by the enemy position and loaded with blank is an effective way of awakening the interest of a class. The rear end, butt, etc., requires concealing by a cloth under which the instructor presses the trigger and the barrel which protrudes can be hidden by trees, etc. The disadvantage of this is that the blast of a revolver blank is too strong and is apt to blow away "features" in the neighbourhood. For safety reasons one must ensure that no one is sitting opposite the revolvers. Once the first round or so is fired the surprise effect is, of course, lost.

Another method is by means of the small cap pistol. If pistols cannot be obtained the caps can be fired by a hammer. These can be fired by an accomplice who is placed under the Sand Model. If the caps are all previously laid out on the floor, which must be stone, quite a realistic burst of fire can be made. The legs of the table should be covered round so that the man beneath is invisible.

For night work, such as patrols, the rooms should be slightly darkened. One or two of the houses can be lit up by small electric bulbs from the same battery as is used for the explosions.

Enemy Verrey lights in the distance can be portrayed as follows:— Place a man behind a screen (a range target will do) in the corner of the room. Give him several strips of magnesium tape (as used for flashlight photos) about four inches long, a bicycle lamp, a pair of pincers and a mug of water. When a Verrey light is required the man takes a piece of magnesium in the pincers, lights it from the lamp, swings the magnesium over his head in a circular motion above the screen and then drops it into the water.

In teaching the working and co-ordination of night patrols some means of representing the time is necessary. This can be done by the local church striking the hours, and half hours. These chimes can be produced by any musically inclined person on a child's piano.

A good deal has been written at one time and another on the construction of the models themselves. Some hints are given in the appendix.

Buildings present no difficulty. A few should be made of cardboard with windows so that electric bulbs can be placed inside.

Tapes, dyed blue or brown, answer for rivers and roads.

Loofahs make good hedges and oddments from these and ordinary sponges provide trees.

Coloured fields can be made by white calico stretched on a frame, coloured as required and let into the sand.

Another method is to fill shallow tins or box lids with coloured sands and sink these till level with the remainder of the countryside.

Halma men or matches can act as men. If possible the enemy and our own troops should be separate colours and section leaders different from the men. In platoon schemes Lewis Gun sections should be different from rifle sections.

An aeroplane and tank will also be required.

A thin wire can easily be fastened across the room above the Sand Model and the aeroplane pulled along this. As it approaches our lines an accomplice beneath the table commences a series of "As" on a Klaxon horn borrowed for the occasion. The correct action for the troops can then be discussed, also the markings of the aeroplane brought out.

Flares can be made by pieces of bent magnesium wire and lit by matches. A good deal of difficulty is experienced in lighting, but this makes things all the more real.

Added interest is obtained if the aeroplane drops a message giving a new situation, or information on which a scheme can be worked.

Tanks can be made of cardboard and pulled from under cover in a wood across the model by cotton of the same colour as the sand. To make it emit a smoke cloud a piece of safety fuse should be fastened round it. The end of the fuse sticking out on top at the back. If this is surreptitiously lit just before the tank breaks cover a good volume of smoke is produced.

Gas training can be brought into Sand Model work as follows: Light a foot of safety fuse and throw it underneath the model. A thick smoke will soon appear on which the instructor should shout gas or beat an improvised gas gong. The lesson is then continued in gas masks.

Having constructed our Sand Model what lessons are we going to teach ?

These may be classed under two headings :—

(1) Section Tactics. Simple Platoon Tactics.

(2) Map reading and reconnaissance.

(1) It is not proposed to go into details. Excellent official books exist on the subject.

Faults should be brought out and criticisms made by the men themselves.

(2) The explanation of topographical terms (col, re-entrant, etc.) and the teaching of contours can be done far easier on a sand model than by drawings on a blackboard.

A good exercise for training observation and memory and also teaching conventional signs and elementary map drawing is as follows :—

Allow the class to look at a completed sand model for about five minutes. Then move into another room where there is a large blackboard with white, brown and blue chalks.

Each man, in turn, is now called out to put on the board one feature using the correct coloured chalk.

When the map is completed it is taken into the Sand Model room and compared with the original.

APPENDIX.

REQUIREMENTS FOR THE SAND MODEL.

The cost of sand model, when once the tray and stand have been made is comparatively small.

(a) Gunpowder, (b) Safety Fuze, (c) Vesuvian Matches can be obtained free from the Ordnance Department through the Quartermaster. Timely notice of requirements should be given however (say 6 weeks) as the procedure for obtaining these items takes rather longer than the usual method of indenting, as the sanction of the Brigade Commander has first to be obtained.

Electric Cells for lighting are issued for the use of signallers, and as these are replaced when unserviceable, arrangements can be made with the Signalling Officer of the Battalion.

Wire required for explosions on the model can be obtained from the local S. D. O. of t Military Electrical services. A

cell larger than the signallers dry cell is required for explosions, this can be obtained from any electrician for about Rs. 9 or better still borrowed from a motor car. The M. E. S. will recharge these, when required, for a few annas.

Models are best made from cigarette boxes. Paints are supplied to the schools, and children will delight in painting these, especially if a prize is given for the best.

Some excellent ideas for the construction of cardboard buildings can be seen in a book "The Little White Town" by Jessie M. King, a copy of which can be obtained from most booksellers.

Trees can be made for loofahs and old sponges. These when dipped in dye are very effective.

Dyes for sand, to make coloured fields, can usually be obtained from the bazaar; a rupee given to a bearer will produce a good assortment.

Paint is issued to the Quartermaster, with whom arrangements can be made for reasonable quantities for painting models, etc.

In winter evenings when lessons are being taken, the sand model room can be warmed up by braziers. Charcoal is usually obtainable from the Quartermaster.

Cards to indicate the range of the model are easily made by sticking numbers from a large wall calendar on pieces of cardboard.

Magnesium tape can be obtained from a good photographic shop.

Every sand model room should have a good blackboard, with an ample supply of coloured chalks and dusters etc.

IMPERIAL ORGANISATION IN RELATION TO IMPERIAL DEFENCE.

(By Captain C. M. P. Durnford.)

INTRODUCTION.

Consideration of our present organisation for Imperial Defence and of the evolution of that organisation, produces the opinion that what we possess is by no means an ideal.

A search for the ideal produces the conclusion that such an ideal is not attainable within the limits of the British character and of the constitution.

In this article the subject is therefore considered under two headings. The first deals with the ideal and the obstacles to its attainment. The second deals with possibilities of improvement within the existing system.

PART I.

1. *The present Constitution of the Empire in relation to Defence.*—The vagueness of the Constitution of the British Empire is a stumbling block which is encountered at the outset in considering the question of Imperial Defence.

It is a somewhat misleading form of words to say that the Empire is a "Brotherhood of Free Nations," for not only does the Empire include Great Britain and the Self-Governing Dominions, but there are also the great Dependency of India, including the Native States which may be ranked as protectorates, and the Crown Colonies, which are administered through the Colonial Office, to be considered.

The War contribution of the latter during the years 1914—18 show that they rank as assets as well as liabilities.

Within the countries and peoples which comprise the Empire are to be found all forms of relationship, varying from complete equality and the right of admission to the highest International Councils of the World, to the least developed form of membership of the Empire—the subject peoples, ruled by the right of power alone, without consultation between the governors and the governed.

It is obvious that an effective defence policy must be based on definite knowledge of the forces available; but when we consider the case of the Home Country and the Self-Governing Dominions, where is there any guarantee that any forces whatever will be available from the latter to enforce the policy of the former? "If you want our help" said Sir Wilfred Laurier, "call us to your Councils." Crises, however, arise rapidly, and decisions which mean war or peace have to be made so quickly that even the use of wireless telegraphy does not allow sufficient time for consultation. The only links between the Self-Governing Dominions and the rest of the Empire lie in a common Monarchy, certain varying and fluctuating mutual interests, and in sentiment.

In each of the Dominions Ministers are responsible to elected legislatures, and governments rise and fall at unpredictable intervals.

Even, therefore, if consultation were continuous, the degree of certainty that forces would be forthcoming in case of need would vary from day to day.

The word "Empire" implies an autocracy, a form of government more favourable to the maintenance of an efficient defence policy than that provided by a liberal constitution based on a wide electorate, such as we and the Dominions possess.

The ideal for us would appear to be that, throughout the self-governing portions of the Empire, defence, in its broadest sense, should be removed from the arena of party politics in order that policy may be continuous.

The defence policy of a nation is largely built up from, and to meet the needs of, the nation's foreign policy.

A sound policy of Imperial Defence of the British Empire would, in the same way, need a foundation in the foreign policy of the government of the whole Empire.

If the components of the Empire are to subscribe to the defence policy they must be represented in the foreign policy, but such representation should carry with it an accepted liability towards the enforcement of that policy.

At present, participation in shaping the foreign policy of the Empire is, except in the case of Great Britain, unorganised and spasmodic. Here we are again confronted by the fact that the Empire has no central Government control based on universal representation. Parliaments of the Self-Governing Dominions owe

no allegiance to Westminster, and there is no Empire Constitution in existence.

It is certain that until the question of adequate representation and influence in Empire foreign policy has been arranged for the Self-Governing Dominions, the latter will not consider the question of placing their resources unreservedly at the disposal of an Empire defence plan, which would need to be prepared in a time when no state of emergency existed.

Again, would it be reasonable to expect, say, Australian troops to assist in the defence of the Indian Frontier, or in maintaining internal security in India, when Australia has no influence in determining Empire policy in that Dependency.

If the Empire possessed a representative central Government, the possessions of the Empire, as well as its foreign affairs, would be managed in accordance with the views of the whole Empire, and not merely with those of the Parliament of Great Britain and Northern Ireland.

Empire forces would then, presumably, be available to defend those possessions from external or internal danger, or to uphold foreign policy.

2. Imperial Federation.—We come then to the conclusion that functions of Imperial Government should be removed from Parliament as now constituted at Westminster.

Whether England, Scotland, Wales and Northern Ireland should continue to be governed, as far as their local affairs are concerned, by a combined Parliament, is not within the scope of this article. The control of Imperial matters should pass to an Empire Parliament or Senate, which would normally meet in Great Britain, so long as the latter remains the predominant partner in the Empire.

Members of the Imperial Senate would represent each of the self-governing portions of the Empire, while delegates from the remainder should represent the interests of the Dependencies, without being allowed to vote.

Members of the Senate should be appointed by some method which would ensure the representation of the chief political parties in each Dominion as a whole. Appointment should, however, be for a fixed term of years, so that the composition of the Senate would not be entirely subject to transitory waves of political opinion, the changes in which more often hinge on local, than Imperial, questions.

The Cabinet of the Senate should include a defence Committee, on which a War Cabinet could be based when required. The latter should be kept as small in numbers as possible. The Defence Committee would initiate policy on the following subjects :—

- (a) Distribution of financial liability for defence services in peace and in war.
- (b) The economic position of the Empire and the development of its resources towards the attainment of a self-supporting status in war.
- (c) Distribution of surplus manpower from centres of population to areas needing development.
- (d) The forging of economic ties by means of tariffs, and encouragement of British shipping.
- (e) Development of Imperial communications.
- (f) Assessment of quotas of forces to be maintained by each Dominion (i) For local defence, (ii) For the Imperial Expeditionary Force.

The latter would be in relation to the requirements of the Imperial General Staff.

PART II.

3. *Failing Imperial Federation, What?*—A scheme of Imperial Federation appears to be the most orderly and practical basis on which to establish a sound defence organisation; but the establishment of such a logical state of affairs, based on a clearly understandable and written constitution, is probably impossible among a race which cannot be said to have a logical outlook or a taste for cut-and-dried methods.

The eventual shape of a tree can be predetermined by pruning and training if the latter are carried out when the tree is young. It is not so easy to make alterations when the tree is more mature.

The Empire, like Topsy, has "grown" and it is not possible to recreate the conditions of past decades in order to divert the growth into other, possibly more desirable channels.

Federation, and the consequent clearing up of the defence problem which would ensue, being regarded as unattainable, it remains to consider possible improvements to existing conditions by less drastic innovations. At the same time the ideal of Federation should be kept in view, worked for, and expounded.

It is considered that improvement in the existing organisation for defence can be effected under the following heads:—

- (a) Political liaison within the Empire.
- (b) The Committee of Imperial Defence and its functions.
- (c) Organisation of manpower.
- (d) Development of material resources of the Empire together with the fostering of essential trades.
- (e) The Imperial General Staff and liaison between the components of the Empire Forces.
- (f) Communications within the Empire.

These are briefly dealt with in the following paragraphs.

4. *Political Liaison within the Empire.*—The periodical meetings of the Imperial Conference are not sufficient to keep the political leaders of the Dominions in touch with the daily trend of policy and events at the centre of the Empire.

The recent creation of the Imperial Research Committee and of a ministry for the Dominions are steps in right direction and are a salve to the *amour propre* of the Dominions; but the personnel of the new bureau which must eventually be created, should be provided up to 50 per cent. by the Dominions themselves.

This raises the difficult question of entry into the Civil Service of overseas citizens. Against such entry there is nothing in theory—it is in practice that difficulties arise. It would appear possible to place the appointment of the necessary quota of officials entirely in the hands of the various Dominion Governments, vacancies to be allotted largely by a system of competition within each Dominion. A slightly lower standard of general education would be more than compensated for by the increased special knowledge which would be available.

An alternative to this suggestion, though a more expensive one, would be for each Dominion to maintain an accredited representative—not at the Court, as is done by foreign nations—but at the Ministry for the Dominions.

There is no reason why both these methods of obtaining a closer liaison in the political sphere should not be employed concurrently.

The enemies which must be combatted are insularity, and the antagonism which bureaucratic method so easily engender.

It is not considered that extension of the functions of the High Commissioners in London will meet the case. These officials already have their hands full in carrying out their proper functions, which are, and should remain, the general and particular questions of commerce. The High Commissioners might indeed pass to the supervision, or even control, of the Dominion Representatives, were such appointed.

English Civil Servants serving in the Ministry for the Dominions, should be sent for a period of four years to work in the Dominion with which they would in future have to do.

5. The Committee of Imperial Defence and its Functions.—Here again great improvement has taken place in recent years.

The Chief of the Naval Staff, the Chief of the Imperial General Staff and the Chief of the Air Staff, sitting as permanent members of the Committee of Imperial Defence are also empowered to place before the Committee combined recommendations as the result of separate meetings as a Chief of a Combined Staff in Commission.

Now that this is the case it seems superfluous that the Secretariat of the C. I. D. should be headed by a member of one of the Services. There is a danger that the latter might become, though quite involuntarily, a source of military advice to the Prime Minister.

The only source of such advice should be the three Chiefs of Staff sitting together as mentioned above. The C. I. D. has such an enormous range of subjects to consider that it would appear impossible that it should be able to carry out its tasks unless it is in permanent session.

It is doubtful whether the present Lord President of the Council is a young enough man to cope with the heavy work thrown on him by his appointment as permanent Vice-Chairman of the C. I. D.

The Dominions should have political representatives as permanent members of the C. I. D. and this office might be carried out by the accredited representatives whom it is suggested that they should maintain at the ministry of the Dominions.

6. Organisation of Manpower, and development of Empire resources.—This is a question which needs co-ordination through the C. I. D. throughout the Empire.

At present, among the civil population, we have no system in Great Britain by which the available manpower is computed or registered and then earmarked for the various Services, arms, or maintenance services or trades, in the event of war.

We are also in danger of forgetting the right of the nation to demand every citizen's service for National Defence.

Many of the Dominions, on the other hand, embody the principle of national training in their Constitutional Forces. Here we have a difference in essentials between the Motherland and the Dominions which can only be straightened out by the adoption of one principle—National Service and Training throughout the Empire.

We want the whole situation as regards manpower under permanent survey. We need to have the essential minimum number earmarked to produce our food and clothing and to carry on our public services. We need an allotment for munition factories, and abolition of competition for recruits between the three Services—in other words, allotment and co-ordination from above, rather than improvisation on what chances to be forthcoming from below.

Migration within the Empire needs direction, with the ends of Defence Policy and maintenance in view. It is probably cheaper to spend fifty millions of pounds on settling our surplus population in Australia than to fight Japan to protect a nearly empty continent. It is similarly better to pay 10 per cent. more for Empire cotton in peace, than to find, when war comes, that the world's supplies of cotton are in foreign, or enemy, control.

7. The Imperial General Staff and Liaison within the Empire Forces.—It is a question whether the Imperial General Staff is, in reality, much more than a name.

There are Dominion Officers at the War Office, though these are too few in number to serve any very practical purpose; but the War Office has no control in peace over Dominion Military Policy or Forces, and the Admiralty has no control over Dominion naval units except by special arrangement.

It is doubtful whether the Dominions would ever accept such control even if the Imperial General Staff were truly Imperial in its constitution.

It would be a great advantage if the Dominion Prime Ministers and Ministers of Defence would come for advice to the

Imperial General Staff instead of to their own local Staffs, and if the Dominions generally would allow their own Staffs to become branch offices of the Imperial General Staff.

This would entail a much greater number of exchanges—more Dominion officers to come Home, and more Home General Staff officers to go to the Dominions. In a word it would mean general interchangeability of Staff Officers and the admission of Dominion Officers to all branches of the War Office Staff, from the Army Council downwards.

It seems improbable that the General Staff could be made truly Imperial in its constitution while the various forces of the Dominions continue to retain their parochial status.

The only thing that can therefore be done, is to broaden the Home General Staff by the inclusion of many more Dominion Officers, in the hope that the Dominions will reciprocate this treatment.

The writer would like to see an Imperial General List of all officers of the three Services and consequent liability to serve in the Dominion Forces on the part of the British Service Officers, and *vice versa*.

It is essential that the same war organisation and establishments should be maintained throughout the Empire, and that the same training manuals should continue to be used. It is also desirable that pay and allowances should be basically the same everywhere, and that any variation in the cost of living should be met by purely local allowances.

8. *Communications within the Empire.*—A force which is spread over a large area depends, for its ability to act together, on the state of its communications.

The United Kingdom increasingly depends on supplies from overseas and these supplies are still sea-borne. Control and development of ocean routes are, therefore, still vital to us.

Two new factors have now appeared which modify conditions to which we have been used. These factors are aviation and wireless telegraphy.

Where our sea routes pass within reach of potential enemy aircraft, based on land, we have a new problem to face. This is especially so in the case of the narrow seas of the world, the defence of which needs thinking out afresh. We also need to develop aerial routes within the Empire, both as regards air

ports and air lines. This would give us a reserve of personnel skilled in flying, and an additional asset in the possession of air bases, and a new means of communication.

As directional wireless becomes perfected, a system of Imperial wireless stations becomes more and more important.

It seems that the subject of communications might well furnish employment for a permanent sub-committee of the C. I. D.

9. *Economy.*—It is accepted as a basis of this article that the unification of control of the three Services under a Ministry of Defence is not within range of present possibilities.

It still seems, however, that economy would result from the concentration of certain auxiliary services into one common service; among others, these include the Medical and Supply Services, Chaplain's Departments and certain branches of the Ordnance Service.

This would reduce the existing number of high appointments and administrative personnel, and would prevent inter-service competition for both men and materials.

Conclusion.—The creation of an ideal organisation for Imperial Defence depends on the revision of the constitution of the Empire. Without a representative Imperial governing body there can be no truly Imperial General Staff or Imperial Defence Policy.

Such revision appears impossible of attainment within a reasonable time, in view of the political difficulties involved.

The existing system, in the late war, has come through the greatest possible strain to which it could have been subjected, and certain innovations have already been introduced as the outcome of experience. It is considered that further improvements are within the range of practical politics, and that the grafting of these into our present system would be in accordance with the natural course of our Imperial evolution. While this method would not produce the ideal, it would give us a practical system which would embody the traditions of the past and the lessons of recent experience.

"Le mieux c'est l'ennemie du bien."

MILITARY NOTES.

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I.

SOVIET UNION.

SOVIET ARMY.

The Military Academy (Staff College).—The new class entering the Military Academy numbers 164. Of these—

135 are Communists, 29 non-party.

54 are workmen, 25 peasants, 36 sons of workmen or of peasants, 49 others.

100 have lower education, 63 middle education, and 1 higher education.

57 are former officers, 36 former non-commissioned officers, 22 former privates, 49 had not served in the old army.

94 have passed commander's courses and other schools in the Red Army, 70 have done no courses.

26 have the order of the Red Flag, and nearly all have been in the Red Army since 1918. (*Pravda*, 16th September, 1925.)

Further—

12·7 per cent. are under 25 years of age, 78·8 per cent. between 25 and 30, and 8·5 per cent. over 30.

65·1 per cent. are Russians, 8·5 per cent. Ukrainians, 6 per cent. White Russians, 5·8 per cent. Letts, 4·8 per cent. Jews, 2·6 per cent. Poles, 1·2 per cent. Azerbaijanians, 1·2 per cent. Armenians and Georgians, and others 3 per cent.

100 are admitted to the Academy course, 27 to the "Supply Course," 33 to preparatory Academy and Supply courses and 4 to the junior course of the Eastern faculty. (*Kras. Zvezda*, 16th September, 1925.)

New regulations regarding compulsory military service in Soviet Russia.—The Soviet regulations relating to compulsory military service, which, until recently, were in force in Soviet Russia, were issued in 1920. These regulations were really a

recast of the old Tsarist regulations, with certain amendments and supplements to make them accord with the daily life and requirements of the Red Army, the organisation of which is "based on entirely different principles from those of the Tsarist Army." The territorial system, on which almost one-half of the Red Army is based, demands fundamental changes in the administrative methods adopted in the army and the regulations for compulsory military service.

The current year is, from this point of view, a turning point in the life of the Red Army. A new plan—drawn up by the army administrative authorities, and confirmed in January—provides for an entirely new organisation of the Red Army; consequently, new regulations regarding compulsory military service were published last month.

The regulations contain novel points, the most interesting of which are as follows:—

From the first part, including the preliminary instructions, it is emphasised that service in the army is a privilege of the working masses. "The non-working elements, who cannot be trusted with the armed defence of our country, since they might rise against the working masses, are therefore deprived of the right of defending the U.S.S.R."

In order, however, to make the non-working classes share the burdens connected with military service, a certain contribution is to be paid to the Government by the "politically unreliable" classes.

A very characteristic definition of the Red Army is given, i.e., "an organisation of armed forces composed of the working masses in their struggle against capitalism."

It is worthy to note that this Red "Army" includes the military, naval and air forces, also of troops with special designation, the O.G.P.U. troops and the so-called "escort" troops.

Compulsory military service is divided into the following stages:—

- (a) Pre-enrolment training.
- (b) Service with regular or territorial units, or a period of special training outside the army.
- (c) Service in reserve units.

A *levee en masse* has been proposed only for citizens "politically unreliable."

The period of service is 21 years (from 19 to 40 years of age), and is divided as follows:—

- (1) From 19 to 21 years of age—compulsory pre-enrolment training.
- (2) From 19 to 26 years of age—service with regular or territorial units, or special training outside the army.
- (3) From 26 to 34 years of age—service in the reserve of the first category.
- (4) From 34 to 40 years of age—service in the reserve of the second category.

Pre-enrolment training.—All citizens between 19 to 21 years of age, prior to their being called up for military service, must undergo pre-enrolment training.

A two years' training period, including 210 hours of exercises, has been established in special training camps organised throughout the country. The aim of this training is "to give military and political instruction to young men and maintain their physical fitness." All expenses connected with the training are paid by the local administrative authorities.

Enrolment.—All citizens who have reached their 21st birthday before the 1st January of the enrolment year, are called up. They undergo a period of active service between September and November. The "Recruiting commissions" are charged with the distribution of recruits among regular and territorial units. In certain cases, the recruits are trained in a special manner outside the army.

The Commissions are responsible for the physical fitness of the recruits and their attitude toward the Soviet Government. The most loyal elements are appointed to the territorial units. Those who are entitled to privileges—in view of their domestic circumstances—are allowed to undergo "special training outside the army."

Active service with the regular units.—The five years term of service with the regular units is composed of active service and periods of long leave:

- (1) In the navy—4 years of service (1 year's leave).
- (2) In the Air force—3 years of service (2 years' leave).
- (3) In the other arms of the service—2 years of service (3 years' leave).

During the periods of leave, the men remain on the registers of their units and may be called up to take part in manœuvres (for a period not exceeding one month, non-commissioned officers for two months).

Soldiers on leave are considered "off duty."

Service with territorial units.—Those serving with territorial units remain, in most cases, at their permanent places of residence and are called up for training periods.

The five years service is divided as follows:—

1st year of service—a three months' training period for all arms of the service.

During the 2nd, 3rd, 4th and 5th years of service, training periods not less than—

| | | | |
|---------------------|-----|-----|------------------|
| In infantry | ... | ... | 4 months in all. |
| In cavalry | ... | ... | 6 months in all. |
| In technical troops | ... | ... | 5 months in all. |

Independently of the above mentioned training periods, men belonging to territorial units may be called up for training outside the army. Not less than 1 week of this training is to be given in the course of a year.

Thus the total training period in territorial units is—

Infantry and artillery—

7 months' training with the units.

4 weeks' training away from units.

Cavalry—

11 months' training with the units.

4 weeks' training away from units.

Technical troops—

8 months' training with the units.

4 weeks' training away from units.

Training outside units—

The following men only are appointed by the recruiting commissions to undergo military service by training away from units:—

(a) Men fit for military service, who were left over after the completion of establishments in the regular and territorial units.

(b) Citizens who are less fit for military service than others.

Those recruits who are appointed to undergo special training apart from units may remain in their homes, and from time to time are called up to take part in exercises carried out in specially organised training camps.

In the course of five years' service the recruits in question must undergo six months' training, so distributed that the annual training does not exceed two months.

Service in the reserve.—On completion of active service, the men are transferred to the reserve where they remain until they are 40 years of age. Service in the reserve is divided into two categories :

1st category—up to 34 years of age.

2nd category—up to 40 years of age.

The difference between these two categories is that the men of the 1st category are under strict control of the military authorities.

Complete discharge from the army takes place on the 1st January after the recruit has completed his 40th year.

During their service in the reserve, men may be called up to take part in exercises—the total length of training periods being not under three months and the annual training periods not exceeding one month.

The training of reservists can be carried out in two ways—either within units or in the training camps apart from units.

Postponement and shorter periods of military service.—Postponement of military service, according to Soviet regulations, can be arranged only for youths still in school or colleges. The general rule is, that postponement can be granted only in peace time to men under 30 years of age.

A certain reduction of the term of service may be made for men who have completed secondary and higher school courses.

With regard to this particular point, the regulations run as follows :—

“All those persons who have completed the courses at secondary schools or higher schools and, after one year's military service (two years in the navy), have passed the examinations required for the rank of commander of reserve units, are entitled to a reduction of the term of service. (It may be reduced to one year in the army and two years in the navy).”

Those who have attained the rank of "commander of the reserve units" are entitled to four years' leave, during which they are considered as attached to the territorial units.

Volunteers.—Volunteers are admitted to the Red Army between the ages of 16 and 34. Foreigners are allowed to join the Red Army as volunteers. All volunteers must sign a contract for a year, but are not included in the Regular Service List.

Militia of the back areas.— "Militia of the back areas" is composed entirely of citizens "unreliable from the political point of view," also the so-called "non-working elements." Only men between 21 and 40 years of age can be called up to the "militia of the back areas." (This militia must not be confused with the "militzie," which is a civil constabulary.)

In peace time, citizens called up to the "rear reserve" must pay a certain military contribution and, in war time, they are attached to various technical units.

Admission into the "militia of back areas" depends on the fitness of recruits for military service.

Exemption from military service does not, however, mean that the citizen in question is exempted from paying the military contribution.

Citizens who are forbidden by their religion to serve in the army.—If they are fit for military service—are sent to public works for a period of three years, after which they are transferred to the reserve, also on special conditions.

In case of mobilisation, these reservists may have to be trained, but not for fighting units. One of the clauses in the regulations deals with the military service of women. Various details with regard to women's service in the army will be published separately and confirmed by the Soviet of People's Commissaries.

The commanding personnel.—The commanding personnel of the Red Army—from the point of view of their duties and training received—may be divided into the following categories :—

- (a) Military commanders.
- (b) Political personnel.
- (c) Administrative personnel
- (d) Medical personnel.
- (e) Veterinary personnel.

From the point of view of experience and special training received, the commanding personnel is divided into four principal categories:—

- (i) Junior commanding personnel (equivalent to N.-C. Os.).
- (ii) Intermediary commanding personnel (equivalent to our junior officers).
- (iii) Senior commanding personnel (equivalent to field officers in our Army).
- (iv) Higher commanding personnel (equivalent to generals in our Army).

Junior commanders are selected from among soldiers who have completed attendance at special schools or courses; all the remaining categories of commanders are selected from those who have completed attendance at secondary schools or colleges.

According to the regulations, commanders of the 2nd, 3rd and 4th categories should be selected from those who have undergone special training and possess a certain military experience.

Junior commanders (N.-C. Os.) undergo colour service and service in the reserve on the same principles as privates. Should a junior commander, on being granted long leave, express a desire to remain in the army, he can do so, but during his further service, he will be considered as a volunteer and will serve on the following conditions:—

(1) Junior commanders serving as volunteers are re-engaged for one year. On completion of this term of service they can remain in the army up to 35 years of age (in the Navy up to 45 years of age).

(2) They enjoy various privileges when joining officers' schools, and during their stay in these schools take part in certain exercises in accordance with their speciality.

(3) Junior commanders, on completion of three years' volunteer service, can be appointed to the posts of commanders of the 11th category.

(4) When transferred into the reserve, junior commanders are the first to be selected for posts in Government offices.

(5) Intermediate, senior and higher commanders are placed under the same regulations. They undergo active service as follows:—

(i) In the Red Army or Navy, including the regular and territorial units and in the reserve.

(ii) Apart from units—when on long leave.

The term of service for these three categories of commanders depends on their military training and the post they occupy.

For every year of training in the military school, commanders must serve two years with the regular units.

The term of service in the reserve for various categories is as follows:—

Intermediate commanders remain in the reserve up to 50 years of age.

Senior commanders remain in the reserve up to 55 years of age.

Higher commanders remain in the reserve up to 60 years of age.

All commanders on the reserve list have the right to wear uniform (the one pertaining to the last post held when on the active list).

Special training for commanders on the reserve list has been stipulated in the regulations.

Rights and duties of those on military service.

With regard to the above, the regulations give a few main ideas which might serve as a basis for detailed regulations in future.

All citizens when on military service enjoy many more privileges than other inhabitants of the U. S. S. R.

Persons on military service are, however, not allowed to occupy profitable posts in Government institutions, or to take part in enterprise, directly or indirectly.

For all offences of a general nature, men on military service are responsible in the same way as the ordinary citizens.

General comments.—The new regulations do not introduce any important changes with regard to the duties of men on military service. Terms of service with the regular units and in the reserve remain unaltered.

A new feature is the introduction of long leave during which the soldiers remain on the registers of their units. As a result of this innovation, a higher standard of efficiency is attained from the point of view of the readiness of units for mobilisation.

The question of pre-enrolment training and military training outside the units is discussed in detail. Up to the present moment, the local authorities were given full initiative in dealing with these questions, which frequently resulted in the alteration of the main principles on which the training in question was to be based.

In the new regulations this particular point is dealt with in accordance with the experience gained.

The predominant feature of the new regulations is a strong class feeling, in consequence of which the rights of the citizens are unequal. Their chief aim is, however, quite clear, *i.e.*, they advocate the realisation of the motto: "A Communist people under arms."

The organisation of a Divisional Cavalry Squadron.—The following is the organization of an independent cavalry squadron attached to a rifle division:—

The establishment of an independent cavalry squadron is 197 men and 178 horses.

The squadron consists of five troops.

Each troop consists of three sections, of which one, in the 1st, 3rd and 5th troops only, is a M. G. section. Thus, three of the 15 sections in the squadron are M. G. (*i.e.*, light automatic).

Each section, other than a M. G. section, is further divided into two half-sections. Thus there are 24 half-sections to the squadron.

An independent cavalry squadron acts independently of any higher cavalry formation, and for this reason its establishments are higher than those of the squadron in a cavalry division. On the other hand, as actual offensive work is largely left to the infantry, the armament is proportionately weaker.

| | | | Establishment. |
|----------------------------------|-----|-----|----------------|
| Squadron commander... | ... | ... | 1 |
| Squadron commissar .. | ... | ... | 1 |
| Assistant commanders of squadron | ... | ... | 2 |
| Assistant commissar ... | ... | ... | 1 |
| Troops commanders ... | ... | ... | 5 |
| Assistant commanders | ... | ... | 5 |
| Section commanders ... | ... | ... | 15 |
| Half-section commanders | ... | ... | 24 |
| Troopers ... | ... | ... | 24 |
| Machine gunners ... | .. | ... | 3 |

| | | | | | Establishment. |
|------------------------------|-----|-----|-----|-----|----------------|
| No. 2's | ... | ... | ... | ... | 3 |
| No. 3's | ... | ... | ... | ... | 3 |
| Senior medical attendant | | ... | ... | ... | 1 |
| Junior medical attendant | | ... | ... | ... | 1 |
| Chief Clerk | ... | ... | ... | ... | 1 |
| Junior Clerk | ... | ... | ... | ... | 1 |
| Chief Veterinary attendant | ... | ... | ... | ... | 1 |
| Junior Veterinary attendants | ... | ... | ... | ... | 2 |
| Chief armourer | ... | ... | ... | ... | 1 |
| Junior armourer | ... | ... | ... | ... | 1 |
| Quartermaster | ... | ... | ... | ... | 1 |
| Chief mechanic | ... | ... | ... | ... | 1 |
| Mechanics... | ... | ... | ... | ... | 4 |
| Farriers | ... | ... | ... | ... | 3 |
| Cook | .. | ... | ... | ... | 1 |
| Pack transport drivers | | ... | ... | ... | 9 |
| Cart drivers | ... | ... | ... | ... | 8 |
| Grooms | ... | ... | ... | ... | 2 |
| Total | | | | | 197 |

THE MILITARY PREPARATION OF THE NATION IN SOVIET RUSSIA.

(From the Polish military journal "Bellona," July, 1925.)

(A) *Organization.*—The idea of giving military training to the youth of Russia already existed from the first days of the Bolshevik régime, but it was not until the decree of the 8th August, 1923 (establishing the territorial system and universal preparatory training), that it was generally put upon a firm basis.

The guiding principles are—

- (1) Military instruction is obligatory both for youths from 16 years and upwards, for men surplus to the yearly contingent, and for reservists.
- (2) This training is bound up with that of the Red Army, and is universal throughout the State.
- (3) The Red General Staff controls it.
- (4) Individuals performing it draw their normal wages while doing so.
- (5) After reaching 19 years of age, those undergoing training are under military law.

In 1924, in place of previous controlling institutions, an inspectorate of extra-regimental training and territorial formations was established to direct the whole policy, under whom were similar district inspectors in military districts, under whom again the executive organs were divisional commanders and provincial military commissariats. (N.B.—By a later decree the provincial military commissariats are abolished, and their duties devolve on corps and independent divisional headquarters, to whom are given an additional staff to deal with the work. When, therefore, the provincial military commissariat is referred to below, it must be understood that divisional headquarters now does its work.) In matters connected with extra-regimental training, the provincial military commissariats are under the divisional commander whose division is in that particular province. Under these, again, are the “*uyezd*” military commissariats, which have to keep—

(a) A register of youths below age of enrolment.

(b) A register of all inhabitants liable to military service.

As regards (a) every young man, after finishing 16 years of age, has to register himself in his enrolment district, from where he receives notice as to the instructional point to which he is to report, when ordered. This point must not be more than 15 kilometres from his home.

As regards (b), registers are kept of the surplus of the yearly contingent and of reservists.

The provincial military commissariat divides the province into instructional districts and forms in each a certain number of permanent instructional points, of which there are three types, namely, for less than 100 pupils, for between 100 and 150, and for between 150 and 200.

Each instructional point must have a recreation room (Lenugolok, or Lenin's corner) with games, musical instruments, pictures and diagrams, a recreation ground, musketry range and ground for field engineering. At each provincial military commissariat there are instructor organizers for setting up these points, and it gets sums of money for their equipment through the inspector of extra-regimental training and territorial formations.

In principle, the instructors and the political instructors are furnished by the divisional commander, normally one instructor for ten pupils and one political instructor per 50 pupils. If the division cannot find them the provincial military commissariat provides additional instructors from the army reserve.

The training is divided into three categories:—

- (a) for youths before enrolment,
- (b) for the surplus of the yearly contingent,
- (c) for reservists,

and can be given either on a regimental basis (*i.e.*, pupils are sent to a regular or territorial division and receive full rations and clothing at state expense), or on an extra-regimental basis (*i.e.*, by evening or two-day assemblies at the instructional points, no rations or uniform being provided by the state).

Personnel, detailed as instructors, are to be assembled a few days before the assembly begins, and the senior among them will fix the programme and give repetition training to the other instructors.

(B) *Training Programmes—*

Syllabus of pre-enrolment training.—The total syllabus is to cover 420 hours in the two years, of which 360 are devoted to military matters and 60 to political teaching. For infantry the course is calculated to suit six five-day assemblies.

(a) *Syllabus for Infantry.*

| Period. | Weapons. | Aiming, etc. | Firing with min. rifle. | Range practice. | Judging distances. | Bombing. | Field service outposts. | Entrenching & cam- ouflage | Guard duties. | Field exercises. | Physical Drill. | Political work. | Total. |
|--------------|----------|--------------|-------------------------|-----------------|--------------------|----------|-------------------------|-------------------------------|---------------|------------------|-----------------|-----------------|------------|
| 1st year ... | 17 | 53 | 20 | 6 | 1 | ... | 30 | 12 | ... | 28 | 10 | 30 | 210 hours. |
| 2nd year ... | 6 | 13 | 13 | 6 | ... | 12 | 32 | ... | 13 | 20 | 5 | 30 | 210 .. |

(b) *Syllabus for Cavalry.*

| Period. | Musketry. | Field exercises. | Drill. | Entrenching & cam- ouflage. | Regulations. | Physical Drill. | Special Training, <i>i.e.</i> , sabre, lance, equita- tion and grooming. | Political work. | Total. |
|--------------|-----------|------------------|--------|--------------------------------|--------------|-----------------|--|-----------------|------------|
| 1st year ... | 40 | 40 | 22 | 6 | 9 | 15 | 48 | 30 | 210 hours. |
| 2nd year ... | 30 | 55 | 20 | ... | ... | 15 | 60 | 30 | 210 .. |

(c) *Syllabus for Engineers and Technical Troops.*

| Period. | Musketry. | Field exercises | Drill. | Regulations. | Physical Drill. | Special technical training. | Political work. | Total |
|--------------|-----------|-----------------|--------|--------------|-----------------|-----------------------------|-----------------|------------|
| 1st year ... | 40 | 28 | 25 | 12 | 15 | 60 | 30 | 210 hours. |
| 2nd year ... | 20 | 40 | ... | ... | 15 | 105 | 30 | 210 „ |

The Syllabus for Railway Troops and Signal Troops is only very slightly different c).

(d)—*Syllabus for the Artillery.*

| Period. | General Training. | | | | | | Special Training (Gunnery). | | | | | Special Training (Drivers). | | | | | | | | | |
|--------------|---------------------|------------------------------|-----------------|-----------------|--------|--------------------------------------|----------------------------------|--------|--------------------------------------|------------------|---------------------------|--------------------------------|--------|----|----|----|----|----|----|---|-----|
| | Musketry. Drill. | Entrenching. Regulations. | Physical Drill. | Political work. | Total. | Gunnery. Equipment. Gun drill. | Horsemanship Field Exercises. | Total. | Gunnery. Equipment. Gun Drill. | Field Exercises. | Horsemanship. Harness. | Equitation. Living Drill. | Total. | | | | | | | | |
| 1st year ... | 28 | 12 | 14 | 15 | 30 | 125 | 25 | 25 | 20 | 15 | 85 | 30 | 20 | 19 | 4 | 2 | 10 | 85 | | | |
| 2nd year ... | 5 | ... | ... | 15 | 30 | 50 | 50 | 32 | 40 | 12 | 26 | 160 | 20 | 10 | 18 | 24 | 16 | 12 | 52 | 8 | 160 |

(e) *Syllabus for Older Classes.*

Men of military age, who are not called up for service in either regular or territorial formations, have to do eight months' training in the course of the five years, according to the programme in force in the territorial units.

Reservists, during the period in which they belong to the reserve, have to do three months' training, for not longer than one month at a time.

The training is intended to refresh their knowledge and to teach them new innovations and is according to the programme of the changeable personnel of the territorial units.

(C.) *General*—*Bellona* proceeds to point out that while the above is the programme, yet in three important points the Soviet Government has failed to carry it out. These are—

- (1) No military training, but only physical, is given between the ages of 16—18, and the military authorities neglect to control even the physical training.

- (2) Pre-enrolment training ought to be carried out over the whole of the territory of the Union, but hitherto in practice it has only been carried out in areas where army units are stationed, and the whole burden falls on the staff of these units, who are unable to cope with it. Attempts to utilise reserve Komsostav to assist in the instructional work are fruitless, on account of their ignorance.
- (3) The specialist training in technical units is quite neglected, on account of lack of instructors and of equipment (except in railway units).

To remedy these deficiencies, the Red Press demanded either a special cadre of instructors in areas where no troops are stationed, the limitation of the training to individual training and musketry, or the abolition of specialist training (except in territorial divisions and Railway troops).

II.

JAPAN.

THE JAPANESE ARMY IN 1925.

1. *Army Organisation.*

(a) *Strength.*—The outstanding feature of the past twelve months has been the completion of the reduction of the army from 21 to 17 divisions, involving the abolition of—

- 4 divisional headquarters (13th, 15th, 17th, 18th).
- 8 infantry brigade headquarters.
- 16 infantry regiments.
- 4 cavalry regiments.
- 4 field artillery regiments.
- 4 engineer battalions.
- 4 transport battalions.

Re-adjustments, consequent on the above, included the re-constitution of 11 other divisions and 18 infantry brigades, while at the same time certain independent cavalry and artillery formations were re-brigaded.

Concurrently with the reduction in numbers, a commencement is being made to remodel the army on a post-war basis.

(b) *Air force, tanks and anti-aircraft.*—Amongst other changes is to be noticed the increase by 50 per cent. in the air force and the constitution of two tank and two anti-aircraft units.

The complete task of forming these units is estimated to take three to four years; in the peace distribution table only one tank unit and one anti-aircraft unit appear as yet; even these two units may be regarded as paper units for the present.

As regards tanks, the establishments are incomplete; only 11 officers are posted to "No. 1 Tank Unit," which is equipped with Renault machines. It seems probable that Japan will shortly acquire the rights to manufacture Renault and Vickers tanks in the steel works at Muroran.

(c) *Automatic weapons.*—The number of light machine guns in units is being increased to six guns per company; these guns are now in process of manufacture and issue. The future organisation of heavy machine guns is still doubtful. A reasonable forecast indicates the abolition of the regimental machine gun company and the formation, for both peace and war, of battalion machine gun companies, each of four guns.

(d) *Chemical warfare.*—The Scientific Laboratory at Tokyo is being enlarged and the interest taken in chemical warfare indicates the advance being made by the Japanese Army. A strong mission toured Europe, headed by Major-General Ogato, Chief of the Scientific Laboratory, with the object of purchasing tanks and studying all types of mechanical and scientific warfare.

(e) *Military training in universities and schools.*—During 1925 the system of intensified military training in universities and secondary schools was introduced, and despite much ill-informed criticism in the press, appears to be progressing. The posting of one officer to each of these 1,150 institutions did much to relieve the anxieties of officers rendered surplus to the active army through its reduction. For surplus officers who could not be catered for in this manner a graduated scheme of compensation was put into force if a suitable civil occupation could not be found.

2.—Overseas garrisons.

(a) *Formosa.*—Outside Japan an increase in the garrison of Formosa is under consideration, by which an aviation wing is to be stationed at the National Aerodrome at Heito. No decision has been arrived at up to the present, but it is considered by the Japanese that the utilisation of an existing police aerodrome by a military air unit cannot be interpreted as the establishment of "new formations," nor an "increase" in the "coast defences," and so does not infringe article 19 of the Naval Treaty of Washington.

(b) *Saghalien*.—From North Saghalien the Japanese expeditionary force was withdrawn gradually during the first half of 1925. In South Saghalien no troops are stationed.

(c) *North China*.—A relief of the 6th (Kumamoto) by the 10th (Himoji) Division took place in Manchuria during the early part of the summer.

In December the fighting between Chang-Tso-lin and Kuo-sung-ling threatened to spread disorder in the South Manchurian railway zone. Normal wastage reduced the 10th Division to below half strength and necessitated the despatch of 1,000 infantry and artillery from Korea and a mixed brigade, totalling 2,500 from the 12th Division at Kurume. By the end of December the troops from Korea had returned to their stations, and the 12th Division's mixed brigade was ordered to return during January of this year.

Tientsin was reinforced by one battalion from Port Arthur. To avoid such expense in the future a proposal is under consideration to increase the existing Japanese garrison at Tientsin.

* * * * *

4.—*The military air service.*

The air service has now been formed into a separate branch of the Japanese Army, similar to the infantry or artillery, with an enlargement and re-organisation of the directorate of military aviation.

Plans have been formulated for raising two new air formations and one balloon section, involving an increase in the number of flights in existing formations from 18 to 26. The increase proposed is to be gradual, and will not be completed before 1926 at the earliest, by which time it is doubtful if the Japanese will be much nearer European standards of aviation than they are at present. For the first time "air manœuvres" were held in September and training generally was on more ambitious lines than in former years.

III.

HOLLAND.

ARMY MANŒUVRES, 1925.

Manœuvre Area.—In 1924 the Dutch War Department set itself to try and arouse public interest in military matters, which had greatly diminished since the Armistice. Importance was

given to the occasion by the presence of the Queen, the Minister for War, Foreign Missions and a number of receptions and banquets. This year things were done on a more modest scale, although the formations engaged were more important. A divisional group, one infantry division and the light brigade took part in the manœuvres which were carried out in the neighbourhood of Amersfoort.

The choice of ground rested chiefly on reasons for economy. The country round Amersfoort is mostly uncultivated and resembles, to some extent, the country round Aldershot. In this area are included the infantry range at Zeist, the artillery range at Oldebroek and the garrison towns of Amersfoort, Ede, Harderwijk and Utrecht. This choice fulfilled the requirements of economy by removing the necessity and expense of troop movements and camps, but failed to provide a manœuvre area corresponding to the conditions likely to attend modern warfare.

Organisation of Units.—The troops taking part were organised in accordance with the recently published regulations for putting the army on a war footing (*Samenstelling van de Landmacht op Voet van Oorlog*). This document is confidential in principle, but publication of its most important parts was authorised by a decision of the Defence Minister.

At the manœuvres the divisional group consisted of—

Headquarters.

A signal detachment.

A reconnaissance detachment.

Two infantry divisions.

CORPS TRAIN (IN SKELETON).

The reconnaissance detachment is an innovation and consisted of—

Headquarters.

A company of cyclists.

Two squadrons of reserve Hussars.

A section of armoured cars (imaginary).

The divisional group does not possess its own artillery, but for this occasion several batteries from the army artillery were attached (12 and 15 cm. howitzers).*

* Owing to lack of material the divisional group artillery provided for, on paper, will only be made up on mobilization.

The infantry division comprised—

- Headquarters.
- A signal detachment.
- Three infantry regiments.
- A squadron of cyclists.
- A regiment of artillery.
- A company of pioneers.

The infantry regiment consisted of—

- Three battalions (4 companies and a machine gun platoon).
- A close support infantry battery (imaginary).
- A light trench mortar battery (imaginary).

The light brigade was organised as follows:—

- Commander and Staff.
- Signalling company:

| | | | |
|----------------------|-----|---|---|
| Cavalry | ... | { | 3 squadrons. |
| | | | 1 machine gun troop. |
| | | | 1 battery 6 cm. |
| | | | 1 " group de liaison." |
| Regiment of cyclists | { | { | 3 companies. |
| | | | 1 machine gun platoon. |
| | | | 1 section A.A. machine guns. |
| | | | |
| Artillery | ... | { | 2 horse batteries 7.5 cm. |
| | | | 1 section 6 cm. guns on lorries. |
| | | | 1 section 12 cm. tractor-drawn howitzers. |
| | | | 6 machine guns. |
| Aeroplanes | ... | { | 1 section reconnaissance (2 planes). |
| | | | 1 section observation (2 planes). |

MATERIAL.

The question of material has not made much progress in the Dutch army, nor will the unfavourable financial situation permit of this deficiency being made up at an early date.

(a) *Machine guns.*—The armament of the infantry is complete in light and heavy machine guns.

The cyclist regiment has not yet got any light machine guns and only possesses heavy machine guns on motor bicycles.

(b) *Rifle grenades*.—Non-existent.

(c) *Close support infantry artillery*.—Since the slow-firing 6 cm. gun was abandoned, no smaller weapon has taken its place.

(d) *Bomb throwers*.—Non-existent.

(e) *Artillery*.—The number of the 7.5 cm. guns per division is still as it was before the war; each infantry division is, under the new organisation, provided with "afdeelingen" (2 or 3 batteries) of 12 or 15 cm. howitzers.

All these howitzers are provided with the old barrels; the question of increasing their range, however, is being studied.

The few 10.5 cm. howitzers which have been tested since last year have not yet been properly organised in the units.

(f) *Anti-aircraft*.—There are in existence eight anti-aircraft guns of 7 and 8 cm., of which some are mounted on lorries (old German pieces interned in 1918).

The military authorities attach great importance to anti-aircraft defence, especially with a view to the defence of Rotterdam and Amsterdam, but they do not appear to realise how great the task will be as compared with the means available. Importance appears to be attached to machine gun defence, although the inefficacy of such a system is realised.

(g) *Mechanicalised artillery*.—No organised unit. Several pieces were mounted on lorries. One type of lorry with semi-elliptical axle was tried at manœuvres. Bringing this gun into action appeared easy.

(h) *Tractor-drawn artillery*.—Experiments have been made for the last two years with various types of tractors; the suppression of a large number of horses is anticipated as likely to be advantageous and within the realms of possibility. Already 15 cm. howitzers are drawn by Fordson twin tractors; the wheels of these are of metal with wide rims fitted with rubber knobs.

A new Latil tractor (25 h. p.) was tried. It had wheels to which ordinary pneumatic tyres could be fitted for the road, or rims with spikes; on the road, these spikes were withdrawn into the inside of the rim. This arrangement appears to simplify traction in ploughed fields.

A 15-h. p. Citroen tractor with caterpillar wheels is on order and it is proposed to use this for the traction of field guns.

(i) *Armoured cars.*—Non-existent. One ordered in France.

(j) *Miscellaneous.*—When the river Eem was crossed, artificial fog generators were used to mask operations. This experiment was anything but convincing; the fog rose rapidly and exposed the ground.

(k) *Aviation.*—The material is very uniform and of recent type; it all comes from the Fokker works. The establishments at Soesterberg (East of Utrecht) are well equipped. The manœuvres, in which 20 aeroplanes took part, showed again that the pilots are first class.

Two types of Fokker's ordered by the army, the C-IV and C-V, destined respectively for observation and reconnaissance, were used for the first time. The latter type is fitted with a Hispano—Suiza engine of 450 (600) h.p.

The Dutch army continues to adhere to the two types of machines described above, *i.e.*, artillery (observation) and chasers (or large reconnaissance). For bombing purposes the army will rely solely on requisitioned civil and transport machines.

CORRESPONDENCE.

DEAR SIR,—I sympathise with the perplexities of "Infantry-man" as poured forth in your April number. They are doubtless shared by many other officers. I think, however, these perplexities will be considerably lessened and possibly will altogether vanish if we realise that—

(1) Unless the Commander of the Main Body is prepared for the rate of advance to be slowed down to a mile an hour or less, in order to give the advanced guard time to search all ground within 2,500 yards of the line of advance, it is quite impossible for a small infantry advanced guard to guarantee the main body against distant rifle fire or effective M. G. fire. No reasonable main body commander would expect this certainty of immunity.

(2) When a complete unit, such as a Company or Battalion, forms the advanced guard, it is often better to advance on a broad front in a normal fighting formation, and not worry about the stereotyped terms such as vanguard, main guard, etc. In other words the advanced guard becomes simply the forward portion of a force advancing against an unlocated enemy.

(3) Unless a very slow rate of advance is agreed to by the Officer Commanding, Main Body, to allow a complete search to be made of every yard of ground, it is best to cover a wide front by advancing with considerable gaps between sub-units (which need not themselves cover an abnormal front). The sub-units thus remain coherent fighting units, with a responsible Commander to lead and direct them, rather than a large number of small parties wandering more or less aimlessly on a wide front, incapable of manœuvre. It is quite true enemy posts may be left behind through the gaps in the suggested formation, but is any normal enemy going to sit still, and allow himself to be passed on both flanks, for the sake of a pot shot at the main body? I say, without any hesitation, no. The enemy post that waited would, in nine cases out of ten, be scuppered trying to get back through the advanced guard. Normal troops will not take chances like that.

Let us discuss some of these points in more detail.

As regards (1)—it must be remembered that while the range of the enemy's weapons remains constant, the searching power of the infantry advanced guard varies in ratio to its size (given an equal rate of advance; a small force can search a lot of ground by constant "concertinaing," but this is very fatiguing for infantry and takes a long time). It therefore follows that as the size of the advanced guard diminishes, the chance of immunity from fire of the main body diminishes in proportion. To carry this argument to its limit, imagine a platoon as the main body, with a section as advanced guard. It is quite obvious that in this case the main body can hope for no guarantee of immunity from fire at even the closest ranges.

It is probable that in close country, it would require at least two Battalions to give to a main body absolute immunity from distant rifle or M. G. fire. Of course if outpost mounted troops are available, immunity can be gained with far fewer infantry. But with small forces all the mounted troops available are so often required for independent cavalry missions.

As regards (2) and (3) I will give a specimen situation to illustrate my solution. I attach a sketch, but as I do not know if the Editor is willing to reproduce sketches in his correspondence column, I will describe the situation in some detail. "A" Coy. is detailed as advanced guard to "X" Bn. marching along a reasonably straight road. Country cultivated, but reasonably open. Enemy expected to oppose advance, but not in great strength. No indication of where or from what special direction opposition will come. No advanced guard mounted troops available. Problem—how should O. C., "A" Company, deploy his Company?

Suggested solution—No. 1 platoon 400 yards to right of road on a frontage of 200 yards (Note—its centre would be 400 yards from road, therefore it would cover the area 300 yards—500 yards from road. The platoon commander would decide its actual formation). No. 2 platoon same dispositions on left of road. (One section No. 3 platoon astride the road and level with Nos. 1 and 2 platoons, Company Headquarters, No. 3 platoon (less one section), No. 4 platoon on or near road 500 yards in rear (of course all these distances and intervals are very approximate; they are open to wide variations in accordance with the situation).

Correspondence.

The suggested solution has the following advantages :—

(1) In case of slight opposition on either flank, there is a responsible Commander with his own sub-unit well in hand ready to deal with it.

(2) In case of slight opposition in the centre, the enemy post will very likely retire without giving much trouble when he finds fighting formations advancing on both his flanks.

(3) In case of more serious trouble, the Company Commander has a solid force under his own hand of nearly two platoons to hit with in any direction.

I daresay many will think the section on the road 500 yards ahead too isolated. Of course the whole of No. 3 platoon could be put there. This however lessens the reserve under the Company Commander's hand. It is a matter for individual judgment.

Finally, I think that you, Mr. Editor, in your notes on "Infantryman's" letter fall into an error, sometimes shared by our text books, in assuming that advanced guard mounted troops are always available. With small forces, they very often are not. If they are available in sufficient numbers there is no need for anyone to be perplexed. The mounted troops do most of the searching, and the infantry do most of the fighting.

With a purely infantry advanced guard, which has to search, be prepared to fight, and keep up a decent rate of advance, the problem is much more difficult.

I remain,

Sir,

Yours faithfully,

A. B. BEAUMAN,

LT.-COL.

[This question is an interesting one and your note throws considerable light on it.

We are in entire agreement with you in paras. (1) and (3) of your note, i.e. that it is quite impossible for a small infantry advanced guard to guarantee the main body against distant rifle fire or effective machine gun fire unless the rate of advance is to be painfully slow and that a large number of small detachments extended over a wide front are to be avoided.

It is, however, considered that your para. (2) and your specimen situation add unnecessary complexities which need not be introduced if the teaching of F.S.R. and Infantry Training is followed. The problem is an ordinary one—a company doing advanced guard to a battalion in (presumably) fairly enclosed country with no protective cavalry available and slight opposition expected.

We prefer a diamond formation as described in Infantry Training, Vol. II, War 1921, Section 18(4). In this case disposition might be as follows:—

No. 1 platoon Van Guard, watching ground 300 yards on either side of the road. Then 500 yards behind comes the remainder of the Company as Main Guard, with two Sections No. 2 platoon 400 yards out on the right of the road and two Sections No. 3 platoon a similar distance out to the left watching the flanks. The Advanced Guard commander has two platoons left in his hand.

The advantages claimed for this distribution are—

- (a) It is a normal distribution according to F.S.R. and Infantry Training which officers are familiar with.
- (b) By having a definite Van Guard as a spearhead it is more likely that the Advanced Guard commander will get early information of what he is up against.
- (c) It gives the Advance Guard commander a bigger reserve. If opposition is met on a flank he can reinforce that flank with the remaining two sections of the Flank Guard and one complete platoon and still keep two sections in hand.
- (d) It does not involve so many men walking across country, always a slow and fatiguing business.

In fact if visibility were good the two sections on either flank might be reduced to one.

Your solution, on the other hand, has the advantage of having a complete unit on each flank.—EDITOR.]

SIR,—I have read with interest the articles by Captain Liddell Hart and Colonel Pepys on the simplification of Infantry drill and I, for one, should rejoice to see something of the sort introduced. I am, indeed, one of those officers referred to who consider that sufficient time is not available during the year for teaching all the various branches of training.

One of the author's contentions is that by the almost complete abolition of ceremonial drill and a great reduction in the rifle exercises less time than formerly would be required for drill.

Is this so?

It is easy to simplify the movements of men and arms but surely more is taught by drill and rifle exercises than the ability for commanders to move their troops at will and the troops themselves to carry their rifles safely?

If this be so, will it not perhaps be more difficult to inculcate and maintain these qualities by the proposed new drill, though doubtless proficiency in the fewer and easier evolutions would be attained sooner? Ceremonial drill is surely an excellent tonic, easily administered and rapid in its action?

By all means let us have a form of drill modernised to suit present-day requirements, but let us be very chary of devoting less time to this subject for that or any other reason.

I am, etc.,

C. P. PAIGE,

MAJOR.

[The above remarks are very much to the point. The Great War proved most emphatically that plenty of good solid drill is essential, not only in the preliminary education of the recruit but in pulling together and toning up a Battalion of trained soldiers after a period of the trenches or a bad mauling in action. Whatever form our drill may take there must be plenty of it to inculcate those habits of steadiness and unhesitating obedience to orders which are more essential to-day than ever they were.—EDITOR.]

DEAR Sir,—The recent correspondence in the Journal on the subject of co-operation between the R. A. F. and the Army, particularly the Artillery, has shown that there is a certain amount of confusion in the use of the expression "Battery Commander."

Formerly it was assumed that the officer commanding a Battery would himself direct its fire. Nowadays, however, the fire of a Battery is not necessarily directed by the senior officer in it. Nevertheless through force of habit the officer who for the time being is actually directing fire is still generally referred to as the "Battery Commander."

It is simpler if the expression "O. C. Battery" is used when referring to the Commanding Officer of the Battery, and the expression "Battery Commander" used only to mean the officer who is directing its fire. There may be two or more officers in alternative O. P.s who each take a turn at the direction of fire, and each is B. C. while so engaged.

One of these O. P.s might well be in the air. But the usual officer to go up would not be the O. C. Battery. The question therefore as to whether a Battery can be efficiently *commanded* from the air does not arise. The point at issue is Fire Control.

At present artillery fire with air observation is laborious and slow, because the R. A. F. observer does not send down fire orders, but only observations, which have to be translated into fire orders at the Battery position. An R. A. officer could send down fire orders direct; but if it is decided not to use R.A. officers in the air, it is essential that R. A. F. officers should learn sufficient of R. A. methods to be able to send down fire orders in the same manner as an R. A. officer would do. This would necessitate a considerable degree of specialisation on the part of the R. A. F.

I am,
SIR,
Yours obediently,
J. W. ENGLISH,
CAPT., R.A.

[The "Battery Commander" is the O. C. Battery and there can only be one Battery Commander at any one time. The observing officer may be directing the fire of the Battery but he need not necessarily be the battery commander.]

You are quite correct, however, in saying that the question is not whether a battery can be *commanded* efficiently from the air but whether its fire can be controlled. As you point out, the present method of air observation is apt to be slow and laborious and the opinion that fire should be observed and actual fire orders sent down by a R. A. officer has many supporters.

Against this, however, it is argued that the targets which appear most important from the air may not always be those immediately affecting the troops on the ground which the guns of the battery are covering. This may especially be the case in very mobile operations where the situation is changing rapidly.

It is agreed that specialisation on the part of the R. A. F. is required in this very important duty of observation of artillery fire and this was stressed in the April number of the Journal of this year.

We must, however, remember that if R. A. officers were to do the observing, the R. A. F. pilot would labour under the very severe handicap of having no Lewis gunner to protect his tail.

The controversy is an interesting one both to R. A. F. and Army officers—EDITOR.]

REVIEWS.

History of the Great War: Based on official documents. The Campaign in Mesopotamia, 1914-18, Vol. III. BY BRIGADIER-GENERAL F. J. MOBERLY, C.B., C.S.I., D.S.O. (London. Published by H. M. Stationery Office, 1925. Price 15s. net.)

General.—It was originally intended to complete the official history of the Campaign in Mesopotamia in three volumes, but to obviate the issue of a bulky and unwieldy third volume, the history is being published in four volumes instead of three. This is a sound decision; to handle an unwieldy book takes away much of the pleasure derived from reading it.

This volume deals with the period from May 1916 to the 30th April 1917, and includes the story of the great battle of Kut-al-Amara, 1917, the pursuit of the Turks to Baghdad, the occupation of Baghdad, and the Turkish retreat northwards into the Jebel Hamrin.

Volume I dealt with a period of almost uniform success. Volume II told one of the most deplorable stories in our military history. Volume III is a thrilling tale of great exploits by British and Indian troops led to victory under the brilliant guidance of General Maude. Brigadier-General Moberly has carried out his task in a very able manner, and in Volume II has given us a book of the greatest historical value. A book, moreover, which is so admirably written that there are no dull pages in spite of the very detailed descriptions he gives of many of the operations. Volume III is fully up to the standard of the previous two volumes and General Moberly deserves the heartiest congratulations.

The author abstains from criticism in this volume, a policy he adhered to in the first two volumes. The student of military history must, therefore, deduce for himself from the material given him by Brigadier-General Moberly the real causes of success or failure in any of the operations described. Some of these causes are obvious, others need careful research and reasoned deduction. Thus, to get full value from the book, the student should work these points out for himself, and compare his criticisms with those given in the numerous other works already published on the campaign.

Consolidation after the surrender of Kut.—General Moberly describes in the first chapter (period May to September 1916) the steps taken to consolidate the British position after Kut had surrendered to the Turks, and gives an account of the discussions that took place to decide the policy to be adopted. The efforts to obtain co-operation with the Russian forces in Persia are of interest. A valuable and detailed account is given of the improvements in organisation and general administrative measures necessary to make the force in Mesopotamia an efficient fighting instrument; improvements which enabled General Maude later to take the offensive.

The author in the next chapter (September to 12th December 1916) reviews very fully the discussions that took place in the autumn of 1916 between General Maude and the authorities in England and in India as to the policy which should govern operations in Mesopotamia. The general situation at the time in other theatres of war is ably described. This chapter is of absorbing interest and is particularly valuable as it includes very fully the strategic reasons on which the plans of General Maude were based.

The Battle of Kut-ai Amara, 1917.—Three chapters are devoted to this battle and constitute a most graphic and enthralling account, accurate in detail and easy to follow with the aid of the excellent maps provided. For the sake of the military student, General Moberly has devoted a special chapter to the capture of the Haisalient and the Dahra Bend, in which he describes this phase in great detail, as it represents the only instance of a period of continuous, close trench fighting. The magnificent fighting qualities of British and Indian units engaged in the battle is emphasised repeatedly in these pages.

The pursuit towards Baghdad.—This chapter describes the pursuit in great detail and in a lucid and graphic manner. The author points out clearly the opportunities lost by the Cavalry Division, which by bolder handling might well have brought about the complete destruction of the hastily retreating Turkish forces.

The occupation of Baghdad and consolidation of the British position at Baghdad.—Two chapters are devoted to this period (March 5th—March 31st). The advance from Aziziya to the Diyala River and the crossing of the Diyala provide pages of most interesting and instructive reading full of tactical lessons.

In describing the occupation of Baghdad, the author goes fully into the strategic advantages to us of the capture of the city, and the great effect the news had in other theatres.

The author's quotations from the book "Baghdad and the story of its last fall," by Captain Muhammad Amin Bey, Turkish General Staff, are of considerable value both in this and in the other chapters of this volume.

The last two chapters describe the operations that took place between April 1st and April 30th round Baghdad. As the author states, these operations are particularly interesting as they form a good example of what can be effected by a mobile force acting on interior lines against enemy forces on exterior lines.

The effect of the Russian revolution on General Maude's plans is fully discussed in these final chapters.

The book is exceptionally free from misprints, and has a useful index at the end of it. The final volume of the history will be awaited with great interest, and we have no doubt that it will be of the same high standard as the first three volumes.

"Twenty-Five Years, 1892—1916." BY VISCOUNT GREY OF FALLODON, K.G., 1925. (Hodder and Stoughton, 42s.)

A large number of books have now been published relating to the years immediately preceding the Great War. The writers of most of those that we have read endeavour to exonerate some particular country or individual from all responsibility for the war and to fix the blame on others.

In the volumes under review we have a consecutive story of the diplomatic events which led up to the Great War, written by one who was intimately concerned with pre-war diplomacy. The author has not set himself to apportion blame or to condemn any particular country or individual, but to present the true facts to the reader from which he can draw his own conclusions.

In the first volume the diplomatic events from 1892 to the 1st August 1914 are described. These years may be divided into two periods.

Firstly from 1892 to 1904. During this period our policy gradually changed from one of friendship with Germany to that of support and membership of the Triple Entente. This transition was not easy. It was marked by numerous 'incidents' with France and Russia. At one time Germany had the opportunity

of a British Alliance based on the fact that one had the greatest fleet and the other the greatest army in the world. It, however, culminated in the signing of an Agreement with France in 1904, and later with the signing of the Persian Agreement with Russia in 1906.

Secondly from 1904 to 1914. With the division of Europe into two large combinations of Powers events moved rapidly. This period is marked by four principal occasions when Germany at first attempted to break up the Triple Entente, and, later to test its strength.

These incidents were—

- (1) Algeciras, 1905-1906. It was this incident that led to the beginning of our military conversations with France.
- (2) Bosnia—Herzegovina—1908-1909.
- (3) Agadir—1911. When Mr. Lloyd George's Mansion House speech completely upset the German calculations.
- (4) The Balkan War—1912-1913.

The final crisis of 1914 is related in detail in the last chapter. The account of Germany's bid for British neutrality and the inevitable reply is of particular interest.

In the second volume the author deals with our entry into the war and Allied Diplomacy up to 1916.

The author is of opinion that militarism and the armaments inseparable from it were the real causes that made war inevitable. As events proceeded he became convinced that we could not stand out. The reasons for, what seemed to many, our undue delay in entering the war and the reasons why we could not give an earlier pledge to stand by France are explained at length.

Though many consider that war might have been averted if we had given a pledge to France in the early days of the crisis, the writer feels sure that it would not.

The narrative contains little about military or naval operations. The author, however, gives us his views on the relations between the statesman and the soldier in war. These must have differed considerably from the views held by some of his colleagues.

We read that—"It is a commonplace of history that amateur strategists are dangerous in time of war. I had no qualities that

inclined me to become one, and if I had had, I hope I should have resisted the inclination."

It is of interest to know that the author was an out and out "Westerner" and considered that the chief mistakes in our strategy may be summarised in two words, "Side-Shows."

The latter half of this volume relates to the difficulties with which we were faced in enforcing the Blockade, Turkey's entry into the war and how Germany outbid us for the support of Bulgaria.

"*The Fight for Everest, 1924.*" BY LIEUT.-COL. E. F. NORTON,
D. S. O. (Edward Arnold and Co., London, 25s.)

No one can fail to be gripped by this simply told story of a very great endeavour which, largely owing to the unusually bad weather, just met with failure.

The book is written in three parts; the first part is the story of the ascent, each chapter being written by different members of the expedition; the second part consists of Mallory's letters to his wife, and the third part contains observations on natural history, geology, etc., by different members of the party.

The book is illustrated with photographs and coloured prints: some of the former taken at the very high altitudes are really wonderful.

One does not need to be a keen mountaineer to be really interested in every chapter and, even if one may start reading the book with an idea that the object was not worth the labour and the suffering involved, one cannot fail as one reads on, to realise something of the lure of Everest in whose attempted conquest eleven men have already lost their lives.

The ordinary reader cannot fail to be struck by one point. The weather was admittedly the biggest factor in the attack on the mountain and yet the only arrangement the expedition had for receiving early information of the weather forecasts was by telegrams from Simla which had to be transported many miles by runner and never arrived in time to be of any use. This is remarkable in view of the completeness of the other arrangements. A portable wireless set would appear essential for future expeditions.

Another very striking point is the difference in the endurance of the British climbers and the Tibetan porters. The latter

could carry loads up to about 23,000 feet which the unacclimatised climbers could not possibly have tackled. Above that height however, with a very few notable exceptions, the Tibetans appeared to just lack that mentality and will to overcome the various physiological difficulties, which enabled the most successful of the climbers to reach the extreme altitudes.

The oxygen problem is an interesting one and is discussed at some length. The story of Mallory and Irvine's final attack on the summit has been read all over the world but it is well worth re-reading and it is told in the book in the most simple but effective way.

The book will be very widely read, especially in India.

"Peking to Lhasa." BY SIR FRANCIS YOUNGHUSBAND. (Oxford University Press, Bombay, 18s.)

*Peking to Lhasa** leaves the reader with a feeling of admiration for a man, who, though nearly 60 years of age and with an injured spine, yet carried through successfully a journey of 7,000 miles, of which he actually walked some 4,000. It is no reflection on the work of the compiler that one puts down the book with a feeling of regret that General Pereira did not live to write his own story of his wanderings. The personal touch of the traveller himself would have lightened the, at times somewhat monotonous, description of the road and the country through which he passed.

George Pereira was born in 1865 and joined the Grenadier Guards in 1883. After an unsuccessful effort to see active service in Egypt, he went to China in 1900, where he took part in the operations for the relief of the Legations at Peking, during the Boxer Rising. From there he went for a short space to South Africa, returning to China in time to be present as Military Attaché during the Russo-Japanese War of 1904-5. Thereafter he was Military Attaché at Peking for four years. Peace soldiering had no attractions for him, and with the termination of his Attachéship, he retired. During the Great War, Pereira commanded a brigade in France and later was with General Knox's Mission to Siberia.

* *Peking to Lhasa*.—Narrative of the journeys in the Chinese Empire made by the late Brig.-Gen. George Pereira, C.B., C.M.G., D.S.O. Compiled by Sir Francis Younghusband, K.C.S.I., K.C.I.E. (Constable, 18s. net.)

General Pereira had two absorbing passions—racing and travel—and so when the close of the war gave him leisure to indulge his bent in the latter direction, it was perhaps only natural that, equipped as he was with a thorough knowledge of China and the Chinese, he should endeavour to carry out his long cherished ambition of traversing China from east to west.

The greater part of the book is devoted to a description of this journey from Peking to Lhasa, and the hardships and difficulties which Pereira's indomitable spirit enabled him to overcome. His other two journeys, across Yunnan and down the Yangtze River and the last trek from Yunnanfu to Kantze in Szechuan, where he died, are described in the later chapters.

The last three chapters are devoted to Pereira's appreciation of the situation in China in 1921, his views on the Chinese student and to "A Tentative Proposal" for the rehabilitation of China. With regard to the last, he says: "The best solution, therefore, seems to be to come to an arrangement with the least incapable of the many leaders in China, to induce him to start a model army under foreign guidance, and to assist him in every way until he is able to stand on his own feet." Unfortunately, the necessary leader is not at present forthcoming. Pereira himself discusses Wu Pei-fu and Tuan Chi-jui, names familiar at the present time, only to turn them down as unsuitable.

Such as are interested in travel and adventure in little known parts of the world will find this book of absorbing interest, an interest which is enhanced by the excellent photographs which accompany it. Of these, that of Lhasa at the beginning of the book deserves special mention.

"The Foundations of the Science of War." By COL. J. F. C. FULLER, D.S.O. (Hutchinson & Co., London. 21s.)

The author claims in his preface that in this book the story of war is for the first time approached by scientific methods as opposed to the alchemy of false classification of real facts combined with inconsistent sequences.

He starts with the organisation of man, whom he describes as a compound of soul, mind and body, three modes of force which must be expended, controlled and maintained in war, and show that the tribe, community or nation reflects the same characteristics.

He next discusses the causes and objects of war, the instrument of war and then, referring back to the moral, mental and

physical aspects of man, he discusses these aspects at considerable length in their relation to war, and their dependence on each other. Here he develops his theme of the three physical elements of war, protection, offensive action and mobility, which have in the past been exemplified, tactically, by artillery to protect the attackers, infantry to attack and cavalry to pursue.

A chapter is devoted to considering the conditions of time, space and force as affecting the instrument of war, showing that the great captains gained their successes by turning these conditions to their advantage.

The principle of "Economy of Force" laid down in F.S.R. is exalted by the author to a Law of War from which he extracts nine Principles of War; direction, concentration, distribution, determination, surprise, endurance, mobility, offensive action and security; these principles he examines at length in four chapters. Finally in a summary of his method, the author pleads for a study of war through system as opposed to the slipshod unmethodical reading or teaching.

Throughout the book, we are warned of the dangers, so often exemplified in the past, lest military thought and progress be fatally clogged by traditions, vested interests and lack of foresight and imagination. The effect of aeroplanes, cross-country tractors, tanks and gas on problems of the future is frequently brought before the reader.

The author anticipates criticism by admitting that the book is written in advance of the military thought of the day, and those who agree with his doctrine will take heart when they remember the important appointment that the author now holds.

For the serious military student the book is arresting and is obviously the product of years of study and independent thought.

Colonel Fuller has not in this book attempted to examine campaigns in the light of his method: as he says, he leaves this for another volume. This volume we shall eagerly await.

"Air Power and War Rights." BY J. M. SPAIGHT.

(Longmans, Green, Bombay, Rs. 17-7.)

In this book the author has produced what can only be described as a complete treatise on Air Power and War Rights, following on his book on War Rights on hand, treating of his subject in very great detail and supporting his statements with the most copious quotations and extracts from the vast mass of

post-war aviation literature. As a work of reference the book should prove invaluable; as an addition to literature on the subject of the rights of air warfare it demands the careful consideration of all who are interested in this new and complex subject and it should be read in many countries outside England and the Colonies.

In 1923 an attempt was made at The Hague to draw up a series of rules for the conduct of air warfare, and the book under review is in reality a critical study of these rules and an attempt to show where they fail and how they may be modified to cover more fully the problems raised by the advent of aircraft, and incidentally three dimensional movements, into modern warfare. Every aspect is considered and suggestions are made to cover every conceivable action by aircraft, directly or indirectly concerned in war. The writer is evidently out to humanise aerial warfare and although everyone will sympathise with his aspirations, it must be admitted that he is probably chasing only a shadow.

He states quite clearly on page 30 what are his main objectives, and, since the whole foundation of his doctrines is based on these statements a brief summary may be permitted. The writer's aims are—

- (a) To prevent bombing of cities by removing all military objectives.
- (b) To minimise loss of life in the bombardment of non-military property, such as factories, by removing personnel before bombing takes place.
- (c) To forbid bombing of railways, termini, etc., within cities.
- (d) To ban all air reprisals.

Air warfare is really a repetition of submarine warfare in a much more acute form, in that, although the submarine attacks the civil population through its stomach, aircraft will attack them directly and personally. Formerly a nation was protected by the armed forces it paid to protect it, nowadays it is directly exposed to the full violence of the enemy's attacks and the most remote village may easily be in the war zone. The greatest weapon of the age is psychological bombing since it may achieve in one stroke what would take armies or navies many months or years; it is unlikely that any nation will readily forego this great advantage.

A country cannot afford to build all its factories in isolated spots and anyhow they probably exist in crowded ones ; it cannot afford to cease all work every night and remove its workers to a safe distance nor can any guarantee be expected that bombing will be confined solely to night, as is suggested. Accurate night bombing, when all lights are obscured, cannot be guaranteed ; admittedly the science of bombing is advancing, but so is the science of anti-aircraft gunnery the result will be to drive aircraft higher and thus increase the errors likely in aiming.

Every possible activity of aircraft is discussed and many of the chapters are of great value and contain sound suggestions. The proposals of the Hague conference are admirable, but they cannot pretend to be exhaustive and the writer's suggestion that an entirely new code must be evolved for the air is indisputable ; that such a code will be obeyed in war time is another matter. Aircraft offer such vast potentialities and temptations to an unscrupulous enemy, that it would be foolhardy in the extreme to rely on any code of rules being respected. This book is a valuable contribution to the problem, but many of the suggestions being on such an idealistic plane, it is feared that they will never materialise.

" The Story of the 29th Division " BY CAPTAIN STAIR GILLON.
(Thomas Nelson and Sons, London, 15s.)

There have been many Divisional histories written since the Great War but perhaps none of them can have such general interest as the Story of the 29th Division.

The old regular divisions which took part in the retreat from Mons certainly had all the eyes of the Empire upon them, and their doings in the early days of the war on the Western Front are familiar to everyone, but it is hardly too much to say that the landing of the 29th Division on Gallipoli in the face of the most appalling casualties was one of, if not the most, gallant exploit of the whole war.

Their total casualties on the Gallipoli peninsula numbered 34,011 or approximately a complete renewal of the division four and a half times.

They then proceeded to the Western Front and served there with great distinction until the Armistice when they had the honour of being selected as one of the two British Infantry divisions to lead the advance into Germany.

They somehow seemed to achieve a Divisional *esprit de corps* almost as pronounced as that which exists in a good battalion.

Their record of 27 V. Cs. is a fine one.

The book is compiled from narratives supplied by the three Divisional commanders and others.

It is well written with good maps and plans unlike many divisional histories, is very interesting to the general reader who may not have taken part in the events described.

"Elementary Tactics or the Art of War, British School." By MAJOR R. P. PAKENHAM-WALSH, M.C., p.s.c. (Gale and Polden, 6s. 6d.)

At first sight it would appear that a book of this sort is superfluous in view of the official text books on the subject but, as the author states in the preface, he has no desire that the book should take the place of the official text books; it is an attempt to put their collected teaching in practical form and is intended chiefly to assist officers who have been out of touch with active soldiering for a few years to get a general line to go on before setting down to the detailed study of the text books.

The book is written in very readable form, is well arranged and should prove extremely useful.

The chapter on the "Characteristics of various fighting troops" is especially good, combining their organisation with their tactical employment.

The chapter on the Administration Services will require slight revision in view of the introduction at Home of the Ammunition Company and the re-naming of the Divisional M. T. Company as the Maintenance Company, and the abbreviations given in chapter IX do not in every case agree with those given in the new Field Service Pocket Book, 1925, but these are minor points which can be easily checked by reference to the official text books.

The book finishes with eight schemes, with maps and solutions. The author has certainly fulfilled his object of giving officers working for Staff College examinations a general line to go on and the book will be especially useful for those who have been out of touch with active soldiering for a few years and do not quite know how to start.

"Military Organisation and Administration." 4th Edition.
By MAJOR W. G. LINDSELL, D.S.O., O.B.E., M.C., R.A. (Gale and Polden, 7s. 6d.)

The object of this book is to assist officers in their study of military administration of the British Army at Home both for examination purposes and for the performance of their military duties. We think that it amply fulfils this object.

Every officer studying for an army examination prefers to acquire his knowledge in as readable and condensed a form as possible, rather than by wading through the numerous official manuals and publications.

This book contains information extracted from no less than forty official publications, and herein lies the danger of depending entirely on any non-official book for information regarding military organisation and administration, for the official publications require almost daily amendment.

This, the fourth edition of Major Lindsell's book, includes amendments issued in Army Orders up to 31st October 1925.

As a guide to those reading for examinations and as an introduction to the official publications this book is of undoubted value.

It is got up in an attractive and readable form and contains a mass of condensed information on army organisation and administration.

"A short History of the British Army to 1914." BY CAPT. E. W. SHEPPARD, ROYAL ARTILLERY. (Constable & Co., London, 14s.)

This is a well written and interesting book. The author writes with considerable pride in his subject but in spite of this the history is unbiassed and failures are written down as well as successes.

The author brings out the fact that we have always relied more on the quality than on the quantity of our military forces. He also makes it clear that when our arms were unsuccessful it was almost invariably the leaders and not the troops that were to blame.

The book is not a "military history" in the accepted sense, as no campaign is studied with the object of bringing out tactical or strategical lessons. It is none the less a valuable addition to a military library and should form an excellent book of reference for officers lecturing on the Army to their men.

"Seaborne Trade—3 Vols., and portfolio of maps." By C. E. FAYLE. (John Murray. £2 10s. 6d.)

In the earlier continental wars in which England was engaged, her armies lived on the country. The question of the maintenance of supply or the protection of seaborne commerce needed no consideration. During the Napoleonic wars the subject assumed a certain importance, but not to any vital extent.

The outbreak of hostilities in 1914 marked a new epoch in the history of wars because of its direct effect on commerce and seaborne trade.

As every student of military geography knows, the British Isles depend for most of their food supplies and raw materials on overseas sources, and it will readily be seen that war with another naval power is a very serious consideration. That this seaborne trade between Great Britain, the rest of the Empire and other parts of the world, was not seriously disturbed is due to three factors.—

- (a) the might of the British Navy in driving the German and Austrian fleets from the High Seas.
- (b) the State Insurance scheme which kept down inflation of underwriters' charges and encouraged owners to risk their ships—they never minded risking their crews.
- (c) the intrepidity of the British merchant seaman.

That we won the war was due to the success of the British Navy in driving the entire enemy merchant fleet from the seas, so that the Central Powers were forced to depend on overland routes and complaisant neutrals for such meagre supplies as reached them.

"Seaborne Trade" is a supplement to Sir Julian Corbett's "Naval Operations" and "is intended to show how seaborne trade was affected during the war by naval operations and conditions having their origin in the naval situation." It is published by direction of the Historical Section of the Committee of Imperial Defence.

Vol. I deals with the earlier cruiser warfare and Vols. II and III with the subsequent submarine campaign.

The functions of an armed navy are (a) to defend the maritime trade routes of its nationals, (b) to seek out and destroy hostile squadrons and (c) to harass enemy trade. If for any

reason (a) and (b) are considered impracticable, as the Germans found, then (c) is the only alternative. The German cruiser attacks on British commerce although serious enough, were negligible with regard to their general effect on trade, and essential supplies.

Anyone reading this book cannot fail to be impressed by the extreme delicacy and complication of modern maritime trade. How the available tonnage on each route must be balanced with the particular needs of that route. How imports and exports must be balanced with credit and arrangements for payment. Above all what a very little will upset the delicate balance of trade, tonnage and credit.

The reader of these very interesting volumes will also doubtless be impressed with the extreme vulnerability of the maritime trade routes of the British Empire and will note how all shipping keeps to well defined tracks, not only for mutual protection but also because these are the shortest routes to the focal points, through or round which all shipping must pass : for example, the mouth of the River Plate, the Cape of Good Hope, the Suez Canal, Colombo, Singapore, etc., etc.

In February 1915 Germany commenced a submarine campaign against allied shipping, the bulk of which was of course of British nationality. Volume II shows how practically the whole of the imported war material and food supplies of the Allies, and the coal supplies for France and Italy were carried in British ships. It brings out the vital necessity for having carefully matured plans for the control of shipping and ports in war time. The undoubted success of the transport of the Expeditionary Force to France in August 1914 was entirely due to its careful and detailed preparation.

The book particularly impresses the reader with the fact that modern war is between nations and not between professional armies and that in any war of the first magnitude the victor will be that side which has most successfully organised its civilian population, its industries and its maritime commerce. The author makes repeated reference to the congestion of ports and the uneconomic use of shipping and rolling stock.

An interesting fact which the author points out is that while for their own safety cruisers engaged in commerce raiding must get out on to the tracks but away from focal points, submarines can lie in wait at the focal points, invisible until the

moment of attack. For this reason alone, the use of submarines in *guerre-de-course* is cheaper and more productive of results than the use of cruisers, apart from the fact that a submarine is considerably cheaper to build and maintain than a cruiser.

In his third volume the author continues his account of the submarine campaign and describes the measures taken by the British Government to counteract its very serious effects. These measures included the appointment of a shipping controller whose duties eventually included centralised chartering, bunker control, freight limitation and construction of standard ships.

When the Germans announced unrestricted submarine warfare on all shipping whether British or neutral there were a large number of neutral ships in British ports chartered by the British Government. In order to prevent these breaking their contracts and scuttling back to their own ports the British Government adopted the "Ship for Ship" policy, *i.e.*, no neutral ship was allowed to sail unless a British consul abroad reported that a similar ship had cleared for a British port.

The author brings out the fact that this final intensive submarine campaign by Germany was a gamble in which the Germans hoped to starve Great Britain into submission before America entered the war.

Our losses from submarine attack eventually became so great that the Navy had to replace the "Routing" system hitherto in force by a system of convoys. This though effective in considerably reducing losses was open to the great objection that it involved delay and interfered with the even flow of trade.

The lessons of the Great War to be derived from a study of its effects on seaborne trade may be summarised as follows:—

- (1) It emphasised beyond all precedent or expectation the vital importance of sea communications.
 - (a) For Great Britain and in fact all industrial countries because of their raw material and fuel requirements from foreign sources of supply.
 - (b) For Germany because her intensive agriculture depended on large oversea supplies of artificial fertilisers and her large population required large supplies of concentrated foodstuffs.
- (2) It proved the necessity for blockading supplies not only to the enemy's own ports, but to every port by which he could communicate by rail, road, river or canal.

This at first seemed impossible because of the difficulty of riding rough-shod over neutrals on whom all belligerents depended for vital supplies. However, as Great Britain by her superior sea power was still in a position to supply certain *materiel* required by neutrals, whereas German export trade was practically paralysed, we were able by a network of agreements enforced by various financial, bunkering and cargo restrictions to effect a more drastic stoppage of enemy trade than could have been secured by sea power alone.

- (3) That what governs the volume of supplies received is not tonnage but annual carrying power. This depends on ships, port and railway facilities, merchants-office and bankers' counting house. A breakdown or lack of co-ordination at any one point will clog the working of the machine.
- (4) That to bear the brunt of the war at sea, whilst maintaining an army at continental scale, must involve a sacrifice of economic and industrial power.
- (5) That had it been possible to foresee the extent of resources and demands the double burden imposed on Great Britain might have been sustained with greater ease.

"Strategical Atlas of the Oceans." BY VAUGHAN CORNISH.
(Sefton Præd. 5s.)

Although nominally an atlas this publication is in reality a copy of a paper read by Prof. Vaughan Cornish at the Royal Colonial Institute, entitled "Singapore and Naval Geography."

The paper consists of a detailed survey of the communication of the British Empire, with special reference to Singapore but although the argument revolves round Singapore, the paper deals with the whole world as in four quadrants, namely the Atlantic, Indian Ocean, West Pacific and East Pacific quadrants.

The lecturer shows that most maps of the world are divided down the 180th meridian which, although convenient for time keeping, is inconvenient for the study of British Imperial geography.

As the lecturer states, we have now entered upon an era in which we require a map of the world which will show without

interruption the communications of the Asiatic and Australian coast of the Pacific westward and eastwards with Europe and North America respectively.

The basis of Prof. Cornish's strategical description of the oceans is a division by the four meridians 20° E., 110° E., 160° W and 70° W. This is illustrated by five maps, one a Mercator Map of the world centred at 110° E., and the remaining four being hemispheres with the abovenamed meridians respectively in the centre. On these four the chief ocean routes are marked in bands approximately proportional to their trade. Also the lands are shaded to show density of population.

This is a publication which should prove useful to Staff College and Promotion candidates.

"The Fighting Forces," March 1926.

"The Fighting Forces" is certainly a most attractive service magazine and is rather lighter reading than most of the Service Journals.

The March number combines several serious articles such as "The Navy and the Taxpayer," by Lieut.-Commander J. M. Kenworthy, R.N., M.P., with one or two short stories and some lighter articles of general interest.

Among the latter are Rugby Football in the Services by "An old international" and an article on Singapore as a Service station.

There is also a short character sketch of General Sir George Milne, the new Chief of the Imperial General Staff, which is, apparently, to be the first of a series of articles on Service Celebrities.

The magazine is one which is well worth getting in any Mess.

"Deeds of Valour performed by Soldiers of the Indian Army."

BY P. P. HYPHER.

This small book is a record of the deed of valour performed by Indian Soldiers which won them the "Indian Order of Merit" until recent years the "Victoria Cross" of the Indian Army.

It covers the period from the institution of the decoration in 1837 until 1859.

We are promised a second volume which will cover the period from 1860 till 1925.

This compilation should be a useful addition to a Regimental Library.

It would, we think, have been of more value if the recipients of the order had been arranged regimentally and an index added.

Guide to First Class and Special Certificates.

IMPERIAL GEOGRAPHY.

(Gale and Polden, London, 6s. 6d.)

This book is one of a series of Army Educational books written with a view to helping candidates studying for the various certificates of education, which are an important feature in our present day Army.

We hope that the papers on Imperial Geography for the first class and special certificates will not require a knowledge of the detail included in the 300 pages of this book.

Though it contains a great deal of valuable information regarding the subject of Imperial Geography, this is largely obscured by a mass of detail and statistics.

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2. "Sealed Pattern" formations for the Cavalry Squadron in Manœuvre, by Major A. G. O. M. Mayne, D. S. O.
3. Some reflections on a Semi-mechanical age, by Colonel on the Staff R. J. Collins, C. M. G., D. S. O.
4. A lorry office, by Colonel H. Rowan Robinson, C. M. G., D. S. O.
5. 1914-15 in East Africa, by Colonel G. M. Orr, C. B. E., D. S. O.
6. The Japanese Army and Navy—A Bulwark against Bolshevism, by Bt. Major B. R. Mullaly.
7. The tactical value of Military History, by Captain L. Gilbert, M. C.
8. The Battles, North of Baghdad in April 1917, by Bt. Lieut.-Colonel H. E. Crocker, C. M. G., D. S. O.

Military Notes.

Correspondence.

Reviews.



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Rules of Membership.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign, naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

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Rupees 120 + entrance fee (Rs. 10) = Rs. 130.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, to be paid in advance. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 10, in advance, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 10.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

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All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of R. A. I. para. 204, and King's Regulations, para. 509.

Anonymous contributions under a *non-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *non-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.

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THIS FUND enables a British Service (Army) officer, by subscribing from Rs. 6 to Rs. 10 per quarter, to assure, in the event of his death while on the Indian Establishment, immediate payment :—

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The Fund (late Queen's Military Widows' Fund) was established in 1820, to assist families of British Service (Army) officers dying in India, and mainly to enable them to return Home without delay.

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1. The United Service Institution of India is situated at Simla.
2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed inside front cover.

3. The Reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.

4. There is a well-stocked library in the Institution, from which members can obtain books on loan free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V.-P. for the postage.

5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members, but ordinary members wishing to have their Journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.

6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found in para. IV, Secretary's Notes.

7. Members are responsible that they keep the Secretary carefully posted with regard to changes of address.

8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the Reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.

NOTICE.

A FAMILY'S DIAMOND JUBILEE.

To Dr. Barnardo's Homes, the largest family in the world, falls the honour this year of celebrating its Diamond Jubilee. In the sixty years of existence it has received 100,700 destitute boys and girls and babies into its family circle. It is still going on growing at the rate of 5 per day. It to-day numbers, 7,636 children.

Since the first beginning of the work at Stepney Causeway (the London Headquarters) it has extended so that the Homes now include Model Villages for girls and boys, Technical Schools, Naval and Mercantile training centres for older lads, a Babies' Castle and numerous branch Homes and Ever-Open Doors throughout the country.

The Food Bill alone for this gigantic family is one of great concern.

22,908 meals have to be supplied every day to the Barnardo family.

About 1,000 gallons of milk are required daily.

An urgent appeal to raise 400,000 Half-Crowns for the Food Fund is being made.

The President of the Homes, H. R. H. the Duke of York, has written an appeal in which he says that:—

“As President of this great work for destitute children, I take the keenest interest in the Special Appeals which are to be made by the Homes during the present year.

“The work of Dr. Barnardo's Homes is well-known and universally appreciated. There is none more justly entitled to any assistance which it is in our power to give than these famous Homes, established for the benefit of destitute children sixty years ago.”

Cheques and Orders may be made payable to “Dr. Barnardo's Homes Food Fund” and crossed, and addressed to “Dr. Barnardo's Homes Food Fund”, 18—26, Stepney Causeway, London, E. 1, England.

Head Offices of Dr. BARNARDO'S HOMES,

18—26, Stepney Causeway,

London, E. 1, England.

11th June, 1926.

United Service Institution of India.

OCTOBER, 1926.

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I.—New Members.

The following new members joined the Institution from 1st June to 31st August 1926.

ORDINARY MEMBERS.

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| Lieut.-Colonel R. H. Haining. | Captain C. W. May. |
| Lieut. W. A. Crowther. | |

II.—Examinations.

(a) The special periods of military history for future Promotion Examinations are as follows :—

| 1 | 2 | 3 | 4 | 5 |
|------------|----------------------|--|--|---|
| Serial No. | Date of examination. | Campaign set for the first time. | Campaign set for the second time. | Campaign set for the last time. |
| 1 | October 1926 .. | Campaign of the British Army in 1914 in France and Belgium from the outbreak of hostilities up to and including the operations on 9th Sept. 1914. | .. | Operations in Waziristan, 1919-20. |
| 2 | April 1927 .. | Campaign of the British Army in Mesopotamia, 1916-17, under General Maude, from his accession to command to his death. Questions may be set on events leading up to the inception of the campaign, and the general conditions under which the Expeditionary force was despatched and reinforced also on the conditions of the country and climate as affecting operations. | Campaign of the British Army in 1914 in France and Belgium. General period from commencement of hostilities to the end of the battle of the Aisne. Special period from 18th August to 31st August (Battle of the Marne). | |
| 3 | October 1927 .. | .. | Mesopotamia (as given in Serial 2, Column 3). | France 1914 (as given in Serial 2, Column 4). |
| 4 | April 1928 .. | To be notified later. | .. | Mesopotamia (as given in Serial 2, Column 3). |

(b) Books on military history and languages with dictionaries are available in the Library. The following list of books may be found useful for reference by officers studying for Promotion Examinations or entrance to the Staff College :—

(The list of books presented and purchased as shown in the Journal should also be consulted.)

MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL HISTORY OF THE WAR.

Military Operations, France and Belgium, Vol. I (to October, 1914).

Military Operations, France and Belgium, Vol. II (to 20th November 1914) (in Press).

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914 (General Maurice, new edition).

1914 (Viscount French).

My War Memories (Ludendorff).

General Headquarters, 1914—16, and its Critical Decisions (Falkenhayn).

The March on Paris, 1914 (Von Kluck).

Ypres, 1914. (An official account) (German General Staff).

Oxford Pamphlets, August 1914. The Coming of the War. (Spencer Wilkinson).

Oxford Pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military, Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grobe Krieg : Die Schlacht bei Mons (German General Staff).

Der Grobe Krieg : Die Schlacht bei Longwy (German General Staff).

Story of the Fourth Army (Montgomery).

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNTS.—

A Brief Record of the Advance of the Egyptian Expeditionary Force, 1919.

The Australian Imperial Force in Sinai and Palestine (H. S. Gullett).

The New Zealanders in Sinai and Palestine (Lt.-Col. C. G. Powles).
Yilderim (Dr. Steuber).

B.—OTHER BOOKS.

Allenby's Final Triumph (W. T. Massey).

How Jerusalem was Won (W. T. Massey).

Outline of the Egyptian and Palestine Campaigns, 1914-18
(Bowman-Manifold).

L'Attaque du Canal de Suez (Douin).

3. The Gallipoli Campaign.

Official Account : Official History of the War, Naval Operations,
Vols. II and III.

Gallipoli Campaign (Outline of Military Operations). By A
Student.

Official Despatches.

The Dardanelles (Callwell).

Experiences of a Dugout (Callwell).

Despatches from the Dardanelles (Ian Hamilton).

The Navy in the Dardanelles Campaign (Wemyss).

The World Crisis (Winston Churchill).

*The Russo-Japanese War, 1904, up to and including the
battle of Liao-Yang.*

A Staff Officer's Scrapbook (Ian Hamilton).

German Official Account.

Lectures on the Strategy of the Russo-Japanese War (Bird).

Question on the Russo-Japanese War (Brunker).

Official Account : The Russo-Japanese War (Naval and Military),
3 Vols., published by Committee of Imperial Defence.

Outline of the Russo-Japanese War (Ross).

A Study of the Russo-Japanese War (Chasseur).

My Experiences at Nan Shan and Port Arthur (Tretyakow).

Outline History of the Russo-Japanese War, 1904, up to the Battle
of Liao-Yang, with Questions and Answers (P. W.).

A short account of the Russo-Japanese War ("Footslogger").

An account of the battle of Liao-Yang (with questions and 10
maps for examination purposes) (Bird).

*5. Organization of Army since 1868.***A.—ORGANIZATION OF ARMY SINCE 1868.**

History of British Army, by Fortescue, Vols. I to XI.

Outline of the Development of British Army, by Major-Genl. Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

B.—FORCES OF THE EMPIRE.

* Notes on the land forces of the British Dominions, Colonies, Protectorates and Mandated Territories, 1925.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, viz., R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

*6. Development and Constitution of the British Empire.***A.—THE BRITISH EMPIRE.**

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The Government of the British Empire (Jenks, 1923).

The Foundation and Growth of the British Empire (J. A. Williamson, 1918).

The Beginnings of English Overseas Enterprise (Sir C. P. Lucas, 1917).

The British Empire Series. (XII volumes).

The Government of England (L. A. Lowell, 1912).

The Expansion of the British Empire (W. H. Woodward, 1921 and 1924 edition).

Overseas Britain (E. F. Knight, 1907).

The Origin and Growth of the English Colonies and of Their System of Government (H. E. Egerton, 1903).

A Short History of Politics (Jenks, 1900).

The English Constitution (Bagehot, 1909).

The Expansion of England (Sir J. Seely, 1883).

* Particularly recommended by the C. I. G., S. for all officers to read.

Introduction of the Study of the Law of the Constitution (A. V. Dicey, 1908).

England in the Seven Years' War (Sir J. Corbett, 1907).

Selected Speeches and Documents on British Colonial Policy, 2 Vols. (A. B. Keith, 1918).

B.—BOOKS ON SPECIAL PORTIONS OF THE EMPIRE OR WORLD.

The Rise and Expansion of British Dominions in India (Sir A. C. Lyall, 1894).

A Brief History of the Indian Peoples (Sir W. H. Hunter, 1907).

The Nearer East (Hogarth, 1902).

Modern Egypt (Cromer, 1908).

Egypt and the Army (Elgood, 1924).

The History of Canada (W. L. Grant).

Nova Scotia (B. Wilson, 1911).

Report on British North America (Sir C. P. Lucas).

The Union of South Africa (R. H. Brand, 1909).

Short History of Australia (E. Scot).

History of the Australasian Colonies (Jenks, 1912).

The English in the West Indies (J. A. Froude, 1888).

The Lost Possessions of England (W. F. Lord, 1896).

7. Military Geography.

Naval and Military Geography of the British Empire (Dr. Vaughan Cornish, 1916).

Elementary Imperial Military Geography (Capt. D. H. Cole, 1924).

Introduction of Military Geography (Col. E. S. May).

Imperial Defence (Col. E. S. May).

Main Feature of the Japanese and other Pacific Problems.

(Reprinted from "Morning Post." Sifton Præd).

Britain and the British Seas (H. J. Makinder, 1907).

Military Geography (Macguire).

Imperial Strategy (Repington).

War and the Empire (H. Foster).

Historical Geography of British Colonies (Dominions), 7 Vols.

(Sir C. P. Lucas, 1906-17)—

- Vol. 1, Mediterranean.
- Vol. 2, West Indies.
- Vol. 3, West Africa.
- Vol. 4, South Africa.
- Vol. 5, Canada.
- Vol. 6, Australia.
- Vol. 7, India.

The Influence of Sea Power on History (A. T. Mahan, 1890).

Historical Geography of the British Empire (Hereford George).

The Mastery of the Pacific (A. R. Colquhoun, 1902).

Frontiers (C. B. Fawcett, 1918).

8. *Foreign Armies.*

OFFICIAL.

- * Handbook of the United States Army, 1924.
- * Handbook of the Army of the Netherlands, 1922.
- * Handbook of the French Army, 1925.

9. *Tactical.*

Common mistakes in the solution of tactical problems and how to avoid them (Lieut.-Colonel A. B. Beauman, 1925).

Historical illustrations to Field Service Regulations, Vol. II (Major E. G. Eady, 1926).

Elementary tactics or the art of war, British School (Major R. P. Pakenham-Walsh, 1926).

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 500 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Regulations for the Army in India, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

*NOT to be removed from the library.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes or ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i. e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India. Members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, “works of reference” or books marked “Not to be taken away,” or noted as “Confidential” may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V. P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased, and also a list of books useful to members studying for the Staff College and Promotion Examinations, will be found under Secretary's Notes in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

The catalogue completed to 31st March 1924 is now available. Price Rs. 3-8-0 or postage paid Rs. 3-14-0.

VII.—Gold Medal Prize Essay Competition.

1926.

The Council has awarded a Gold Medal and an honorarium of Rs. 150 to Major L. E. Dennys, M. C., 4/12th Frontier Force Regiment.

1927.

The Council has chosen the following subjects for the Gold Medal Essay for 1927 :—

- (i) In view of the climatic and physical features of theatres in which the Army in India is likely to be employed, consider the possibility of mechanicalizing its various arms and services. To what extent would such mechanicalization affect our present methods of operating on the North-West Frontier of India ?

or

- (ii) In the event of a war threatening British interests in the Far East and Indian Ocean, consider the best method of

employing the fighting forces of India, and such expeditionary forces as the Australasian Dominions may be able to furnish as a covering force, pending the mobilization of the resources of the Empire.

The following are the conditions of the competition :—

1. The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army and Royal Air Force or Auxiliary Forces who are members of the U. S. I. of India.
2. Essays must be printed or type-written and submitted in triplicate.
3. When a reference is made to any work, the title of such work is to be quoted.
4. Essays are to be strictly anonymous. Each must have a motto and, enclosed with the essay, there should be sent a sealed envelope with the motto written on the outside and the name of the competitor inside.
5. Essays will not be accepted unless received by the Secretary on or before the 30th June 1927.
6. Essays will be submitted for adjudication to three judges chosen by the Council. The judges may recommend a money award, not exceeding Rs. 150, either in addition to or in substitution of the medal. The decisions of the three judges will be submitted to the Council, who will decide whether the Medal is to be awarded and whether the essay is to be published.
7. The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1927.
8. All essays submitted are to become the property of the United Service Institution of India absolutely and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.
9. Essays should not exceed 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,

J. G. SMYTH, CAPTAIN,

Secretary, U. S. I. of India.

SIMLA :

1st October 1926.

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VIII.—Army List Pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the rate of Rs. 2 per manuscript or type-written page.

IX.—**BOOKS PRESENTED.**

| <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|---|-------------------|------------------------------|
| 1. Military Report on Poona District (Presented by the Superintendent, Government Printing, Calcutta.) | 1925 | Official. |
| 2. Perils of Amateur Strategy .. (Presented by Messrs. Longmans, Green & Co., London.) | 1926 | Sir G. Ellison. |
| 3. Series of Handbooks on the Con- .. struction and Installation of Wireless Sets. (Presented by Messrs. P. Marshall & Co., London.) | .. | Ballhatchet and Williams. |
| 4. India's Parliament, Vol. XI .. (Presented by the Director, Central Information Bureau.) | 1925 | Official. |
| 5. Report of the Northern Command Staff Exercise and Manœuvres, 22nd November to 30th Novem- ber 1925. (Presented by the Superintendent, Government Printing, Calcutta.) | 1925 | Official. |
| 6. Frontier and Overseas Expedi- tions from India, with Supple- ments (6 Vols.). (Presented by the Superintendent, Govt. Printing, Calcutta.) | 1925 | Official. |
| 7. *Sketches of Indian Rivers .. (Presented by the General Staff, India.) | 1847 | J. F. Stace. |
| 8. Aircraft and Commerce in War .. (Presented by Messrs. Longmans, Green & Co., London.) | 1926 | J. M. Spaight. |

| | <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|-----|--|-------------------|----------------|
| 9. | Routes in the Central Provinces District. (Presented by the Superintendent, Government Printing, Calcutta.) | 1926 | Official. |
| 10. | Guide to First Class and Special Certificates. (Practical Mathematics.) (Presented by Messrs. Gale & Polden, Ltd.) | 1926 | F. P. Roe. |
| 11. | *Troye's Maps of the Transvaal.. (Presented by the General Staff, India.) | 1896 | Official. |
| 12. | *Military Maps Illustrating the Operations of the Armies of the Potmac and James, 1864-1865. (Presented by the General Staff, India.) | .. | Official. |
| 13. | *Handbook of the French Army (Presented by H. M. S. O.) | 1925 | Official. |
| 14. | *Military Report on the Colony and Protectorate of the Gambia, Vol. II, Routes. (Presented by H. M. S. O.) | 1926 | Official. |

BOOKS PURCHASED.

| | <i>Title.</i> | <i>Published.</i> | <i>Author.</i> |
|----|--|-------------------|--|
| 1. | Four Centuries of Modern Iraq. .. | 1925 | S. H. Longrigg. |
| 2. | Skyways .. | 1925 | Alan J. Cobham. |
| 3. | Deeds of Valour performed by Indian Soldiers, 1837-59. | 1925 | P. P. Hypher. |
| 4. | Military Law (fifteenth edition) | 1926 | S. T. Banning. |
| 5. | Disarmament .. | 1926 | P. J. Noel Baker. |
| 6. | Statesman Year Book .. | 1926 | .. |
| 7. | False Dawn .. | 1925 | A. L. Carthill. |
| 8. | Our First Airways .. | 1925 | { Claude Grahame- White. Harry Harper. |

BOOKS ON ORDER.

| | <i>Title.</i> | <i>Author.</i> |
|----|---|--------------------|
| 1. | Intimate Papers of Colonel House .. | Seymour. |
| 2. | Naval History of the World War (2 Vols). .. | T. G. Frothingham. |
| 3. | Jane's Fighting Ships | .. |

*Not to be removed from the Library.

SALE OF PERIODICALS.

This Institution offers the following periodicals to members on sale for twelve months—1st January to 31st December 1927. The papers will be sold to the members submitting the highest bids by 31st December, 1926. Each issue of the periodicals will be sent to the purchaser as soon as the next issue arrives in Simla. In the case of purchasers in Simla, delivery will be free, otherwise postage will be charged.

ENGLISH PUBLICATIONS.

| <i>Title.</i> | <i>Published.</i> | <i>Cost per copy, new.</i> |
|---|-------------------|--------------------------------|
| | | s. d. |
| 1. The Review of Reviews .. | ..Monthly | 1 0 |
| 2. The Cavalry Journal .. | ..Quarterly | 5 0 |
| 3. The Asiatic Review .. | .. Do. | 5 0 |
| 4. The Royal Engineers' Journal .. | .. Do. | 5 0 |
| 5. The Fighting Forces .. | .. Do. | 5 0 |
| 6. The British Empire Review .. | .. Do. | 0 6 |
| 7. The Nineteenth Century and After. | Monthly | 3 0 |
| 8. The Navy | .. Do. | 0 6 |
| 9. The Empire Review .. | .. Do. | 2 0 |
| 10. The Geographical Journal .. | .. Do. | 2 0 |
| 11. The United Empire .. | .. Do. | 1 0 |
| 12. The Journal of the R. A. M. C. | .. Do. | 2 0 |
| 13. Blackwood's Magazine .. | .. Do. | 2 6 |
| 14. The Aeroplane | ..Weekly | 0 6 |
| 15. Journal of the Royal Artillery | ..Quarterly | 5 0 |
| 16. Monthly Notices of the Royal Astronomical Society. | Monthly. | 4 0 |
| 17. The Royal Army Service Corps | ..Quarterly | 2 6 |
| 18. The Journal of the R. A. S. C. | ..Monthly | 0 7 |
| 19. The Export and Commercial Intelligence World. | Do. | 1 0 |
| 20. The World's Health .. | .. Do. | 0 6 |
| 21. The Times' Weekly Illustrated .. | ..Weekly | 0 4 |
| 22. The Canadian Defence Quarterly | ..Quarterly | \$ 1 50 |

AMERICAN PUBLICATIONS.

| <i>Title.</i> | <i>Published.</i> | <i>Cost per copy, new. cents.</i> |
|---------------------------------------|-------------------|---|
| 1. The National Geographical Magazine | ..Monthly | 50 |
| 2. Coast Artillery Journal .. | .. Do. | 50 |
| 3. Foreign Affairs .. | ..Quarterly | 1\$ 25 |
| 4. The Infantry Journal .. | ..Monthly | 50 |
| 5. Journal of the Franklin Institute | .. Do. | 60 |
| 6. The Army and Navy Journal | ..Weekly | 20 |
| 7. The Cavalry Journal .. | ..Quarterly | 65 |

OTHER FOREIGN PUBLICATIONS.

| <i>Title.</i> | <i>Published.</i> |
|---|-------------------|
| 1. Revue Militaire Suisse .. | ..Monthly. |
| 2. L'Afrique Francaise .. | .. Do. |
| 3. Bulletin Belge des sciences Militaires | .. Do. |
| 4. Alere Flammam | .. Do. |
| 5. Memorial de Artilleria (Spanish) | .. Do. |
| 6. Miffen Und Mehr .. | .. Do. |

X.—Pamphlets.

The following may be obtained by V. P. P., plus postage, on application to the Secretary :—

- (a) British and Indian Road Space Tables (separately). As. 12 each.
- (b) Diagram of Ammunition Supply (India). As. 4.
- (c) Home War Establishment Tables (provisional). Re.1-4-0.
- (d) Diagram showing new system of maintenance in the field at Home. As. 8.
- (e) Military Law Paper, questions and answers. As. 4. (As used at the A. H. Q. Staff College Course, 1926).

XI.—Schemes.

The schemes in the Institution have been considerably increased and in order to simplify their issue they have been classified and numbered as follows :—

They can all be obtained by V.-P. P. plus postage, on application to the Secretary.

- (A) *Administrative Exercise* (with diagram) .. Rs. 2.

To illustrate the supply system of a Division.

Suitable for Staff College or promotion.

- (B) *Mountain Warfare* Rs. 5 each.

(i) Three lectures on Mountain Warfare.

(ii) A scheme complete with Map and Solution.

- (C) *New Staff College Series* (1926) Rs. 5 each.

Each of these schemes is complete with map, solution and reasons. Each scheme contains three situations.

(i) Approach March.

Reconnaissance of night attack.

Orders for night attack.

(ii) Outposts.

Defence.

Action of a Force retiring.

(iii) Move by M. T.

Occupation of a defensive position.

Counter-attack.

(iv) Tactical Exercise without troops.

Reconnaissance for attack.

Attack orders.

(D) *Promotion Series* Rs. 5 each.

Each of these schemes is complete with map and solution.

- (i) Outpost.
Defensive position.
Withdrawal.
- (ii) Tactical Exercise without troops.
Reconnaissance.
Attack orders.
- (iii) Mountain Warfare.
- (iv) Defence.
Attack orders.
- (v) Appreciation of the situation.

(E) *Staff College Course Schemes (1926).*

- (i) A set of three schemes, as given at the A. H. Q. Staff College Course, 1926, complete with map and solutions. *Complete set* Rs. 6.

A limited number of the following papers are available :—

- (ii) Tactical Exercise without troops (with map and solution) Rs. 3-8.
- (iii) Outpost problem (with map and solution) .. Rs. 3
- (iv) Rearguard scheme (with map and solution) .. Rs. 3.
- (v) Organisation and Administration paper (with solution) Rs. 2.

(F) Copies of the recent (February 1926) Staff College Examination papers are available :—

- Training for war papers (with maps) .. Rs. 3 each.
- Other papers Re. 1 ..

Efforts are being made to compete with demands for tactical schemes from officers working for the Staff College and Promotion Examinations by introducing as many new schemes as possible.

It is obviously impossible for the Secretary to undertake the correction of individual solutions, but all the recent schemes include a suggested solution in the form in which it is considered that the paper should have been answered with reasons for the solution given.

Officers are recommended to work all their schemes against time and to get into the habit of the methodical allotment of time to the various questions asked.

XII.—Training Manuals.

The following new Training Manuals have recently been published at Home :—

Machine Gun Training, 1925.

Infantry Training, Vol. II.

Field Service Pocket Book.

They will all be reprinted for issue in India but in the meanwhile can be obtained on payment from any of the big booksellers.

XIII.—Attendance of officers from India at Courses of Instruction and Manœuvres at Home during their leave.

I. A. O. No. 122 of 1926 announces that—

- (a) A limited number of officers on the Indian Establishment may attend courses of Instruction at Home on application to their Command Headquarters.
- (b) 20 officers may do short periods of attachment to units between May and September and to formations during July and August. Applications to be submitted through Commands.
- (c) Officers may attend manœuvres at Home as spectators on application to the India Office.

In the case of (a) and (b) officers will be eligible for all allowances, in addition to leave pay, admissible in similar circumstances to an officer of the British service on the Home Establishment. In the case of (c) no allowances are admissible.

UNITED SERVICE INSTITUTION OF INDIA.

Prize Essay Gold Medalists.

xix

(With rank of Officers at the date of the Essay.)

- 1872..ROBERTS, Lieut.-Col. F. S., v.C., C.B., R.A.
1873..COLQUHOUN, Capt. J. S., R.A.
1874..COLQUHOUN, Capt. J. S., R.A.
1879..St. JOHN, Maj. O.B.C., R.E.
1880..BARROW, Lieut. E. G., 7th Bengal Infantry.
1882..MASON, Lieut. A. H., R.E.
1883..COLLEN, Maj. E. H. H., s.c.
1884..BARROW, Capt. E. G., 7th Bengal Infantry.
1887..YATE, Lieut. A. C., 27th Baluch Infantry.
1888..MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..DUFF, Capt. B., 9th Bengal Infantry.
1890..MAGUIRE, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..CARDEW, Lieut. F. G., 10th Bengal Lancers.
1893..BULLOCK, Maj. G. M., Devonshire Regiment.
1894..CARTER, Capt. F. C., Northumberland Fusiliers.
1895..NEVILLE, Lieut.-Col. J. P. C., 14th Bengal Lancers.
1896..BINGLEY, Capt. A. H., 7th Bengal Infantry.
1897..NAPIER, Capt. G. S. F., Oxfordshire Light Infantry.
1898..MULLALY, Maj. H., R.E.
 CLAY, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).
1899..NEVILLE, Col. J. P. C., s.c.
1900..THUILLIER, Capt. H. F., R.E.
 LUBBOCK, Capt. G., R. E. (specially awarded a silver medal).
1901..RANKEN, Lieut.-Col. G. P. P., 46th Punjab Infantry.
1902..TURNER, Capt. H. H. F., 2nd Bengal Lancers.
1903..HAMILTON, Maj. W. G., d.s.o., Norfolk Regiment.
 BOND, Capt. R. F. G., R.E. (specially awarded a silver medal).
1904..MACMUNN, Maj. G. F., d.s.o., R.F.A.
1905..COCKERILL, Maj. G. K., Royal Warwickshire Regiment.
1907..WOOD, Maj. E. G. M., 99th Deccan Infantry.
1908..JEUDWINE, Maj. H. S., R.A.
1909..MOLYNEUX, Maj. E. M. J., d.s.o., 12th Cavalry.
 ELSMIE, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. PETRIE, M.A., Punjab Police.
1912..CARTER, Maj. B. C., The King's Regiment.
1913..THOMSON, Maj. A. G., 58th Vaughan's Rifles (F. F.).
1914..BAINBRIDGE, Lieut.-Col. W. F., d.s.o., 51st Sikhs (F. F.).
 NORMAN, Maj. C. L., m.v.o., q.v.o., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..CRUM, Maj. W. E., v.D., Calcutta Light Horse.
1917..BLAKER, Maj. W. F., R.F.A.
1918..GOMPERTZ, Capt. A. V., m.c., R.E.
1919..GOMPERTZ, Capt. M. L. A., 108th Infantry.
1920..KEEN, Lt.-Col. F. S., d.s.o., 2/15th Sikhs.
1921..No Award.
1922..MARTIN, Maj. H. G., d.s.o., o.B.E., R.F.A.
1923..KEEN, Colonel F. S., d.s.o., I.A.
1924..No Award.
1925..No Award.
1926..DENNYs, Major L. E., m.c., 4/12th Frontier Force Regiment.

MACGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June :—

(a) For officers—British or Indian—silver medal.

(b) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(i) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(ii) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers and soldiers at the date of the Award.)

1889..BELL, Col. M.S., v.c., R.E. (specially awarded a gold medal).

1890..YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

* *N. B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Indian Auxiliary and Territorial Forces and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

MacGregor Memorial Medalists—(contd.).

- 1891..SAWYER, Major H. A., 45th Sikhs.
RAMZAN KHAN, Havildar, 3rd Sikhs.
- 1892..VAUGHAN, Capt. H. B., 7th Bengal Infantry.
JAGGAT SINGH, Havildar, 19th Punjab Infantry.
- 1893..BOWER, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
FAZALDAD KHAN, Dafedar, 17th Bengal Cavalry.
- 1894..O'SULLIVAN, Major G. H. W., R.E.
MULL SINGH, Sowar, 6th Bengal Cavalry.
- 1895..DAVIES, Capt. H. R., Oxfordshire Light Infantry.
GANGA DYAL SINGH, Havildar, 2nd Rajputs.
- 1896..COCKERILL, Lieut. G. K., 28th Punjab Infantry.
GHULAM NABI, Sepoy, Q. O. Corps of Guides.
- 1897..SWAYNE, Capt. E. J. F., 10th Rajput Infantry.
SHAHZAD MIR, Dafedar, 11th Bengal Lancers.
- 1898..WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
ADAM KHAN, Havildar, Q. O. Corps of Guides.
- 1899..DOUGLAS, Capt. J. A., 2nd Bengal Lancers.
MIHR DIN, Naik, Bengal Sappers and Miners.
- 1900..WINGATE, Capt. A. W. S., 14th Bengal Lancers.
GURDIT SINGH, Havildar, 45th Sikhs.
- 1901..BURTON, Maj. E. B., 17th Bengal Lancers.
SUNDAR SINGH, Colour Havildar, 31st Burmah Infantry.
- 1902..RAY, Capt. M. R. E., 7th Rajput Infantry.
TILBIR BHANDARI, Havildar, 9th Gurkha Rifles.
- 1903..MANIFOLD, Lieut.-Col. C. C., I.M.S.
GHULAM HUSSAIN, Lance-Dafedar, Q. O. Corps of Guides.
- 1904..FRASER, Capt. L. D., R.G.A.
MOGHAL BAZ, Dafedar, Q. O. Corps of Guides.
- 1905..RENNICK, Maj. F., 40th Pathans (specially awarded a gold medal).
MADHO RAM, Havildar, 8th Gurkha Rifles.
- 1906..SHAHZADA AHMAD MIR, Risaldar, 36th Jacob's Horse.
GHAFUR SHAH, Lance-Naik, Q. O. Corps of Guides Infantry.
- 1907..NANGLE, Capt. M. C., 92nd Punjabis.
SHEIKH USMAN, Havildar, 103rd Mahratta Light Infantry.
- 1908..GIBBON, Capt. C. M., Royal Irish Fusiliers.
MALANG, Havildar, 56th Punjab Rifles.
- 1909..MUHAMMAD RAZA, Havildar, 106th Pioneers.

MacGregor Memorial Medalists—(concl'd.).

- 1910..SYKES, Maj. M., c.m.g., late 2nd Dragoon Guards (specially awarded a gold medal).
TURNER, Capt. F. G., R.E.
KHAN BAHADUR SHER JUNG, Survey of India.
- 1911..LEACHMAN, Capt. G. E., The Royal Sussex Regiment.
GURMUKH SINGH, Jemadar, 93rd Burmah Infantry.
- 1912..PRITCHARD, Capt. P. P. A., 83rd Wallahabad Light Infantry (specially awarded a gold medal).
WILSON, Lieut. A. T., c.m.g., 32nd Sikh Pioneers.
MOHIBULLA, Lance-Dafedar, Q. V. O. Corps of Guides.
- 1913..ABBAY, Capt. B. N., 27th Light Cavalry.
SIRDAR KHAN, Sowar, 39th (K. G. O.) Central India Horse.
WARATONG, Havildar, Burmah Military Police (specially awarded a silver medal).
- 1914..BAILEY, Capt. F. M., I.A. (Political Department).
MORSHEAD, Capt. H. T., R.E.
HAIDAR ALI, Naik, 106th Hazara Pioneers.
- 1915..WATERFIELD, Capt. F. C., 45th Rattray's Sikhs.
ALI JUMA, Havildar, 106th Hazara Pioneers.
- 1916..ABDUR RAHMAN, Naik, 21st Punjabis.
ZARGHUN SHAH, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).
- 1917..MIAN AFRAZ GUL, Sepoy, Khyber Rifles.
- 1918..NOEL, Capt. E. W. C. (Political Department).
- 1919..KEELING, Lt.-Col. E. H., M.C., R.E.
ALLA SA, Jemadar, N.-E. Frontier Corps.
- 1920..BLACKER, Capt. L. V. S., Q. V. O. Corps of Guides.
AWAL NUR, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides. (Special gratuity of Rs. 200.)
- 1921..HOLT, Major A. L., Royal Engineers.
SHER ALI, Sepoy No. 4952, 106th Hazara Pioneers.
- 1922..ABDUL SAMAD SHAH, Capt., o.b.e., 31st D. C. O. Lancers.
NUR MUHAMMAD, Lance-Naik, 1st Guides Infantry, F. F.
- 1923..BRUCE, Capt. J. G., 2/6th Gurkha Rifles.
SOHBAT, Head Constable, N. W. F. Police.
HARI SINGH THAPA, Survey Department.
- 1924..HAVILDAR RAHMAT SHAH, N. W. F. Corps.
NAIK GHULAB HUSSAIN, N. W. F. Corps.
- 1925..SPEAR, Captain C. R., 5/13th Frontier Force Rifles.
JABBAR KHAN, NAIK, 5/13th Frontier Force Rifles.
- 1926..HARVEY-KELLY, Major C. H. G. H., D.S.O., 4/10th Baluch Regiment.

The Journal

OF THE

United Service Institution of India.

Vol. LVI. OCTOBER, 1926. No. 245.

EDITORIAL.

The Imperial Defence College, which has been so much discussed recently, is now a "*fait accompli*" and the first course will start in London next January.

The object of the College is to train a body of officers and civilian officials in the broadest aspects of strategy.

Each course will consist of 30 students, 5 from each of the Services, 5 from the Civil Service and the remainder from India and the Dominions.

The first course will last a year, though it may be necessary to extend this period for later courses.

The Commandants are to be chosen from each of the 3 Services in turn starting with the Royal Navy; Vice-Admiral Richmond has been chosen as the first Commandant.

There are to be four Instructors one from each of the three fighting Services and one from the Civil Service.

Army students are to be p.s.c. officers of the substantive rank of Major.

The formation of this College will fill a long-felt want and will lay the foundation of a small nucleus of officers who have been trained to look on the problems of Imperial Defence from the broadest aspects.

It is logically the first step in the formation of a Ministry of Defence if it should later be found advisable to institute such a department.

It also will create a body of officers who could, if necessary, be brought together to form an Imperial General Staff, of which at present

only the Chief actually exists. For the next war it is essential that we should have a combined staff to direct operations consisting of representatives of the 3 fighting Services and of the Dominions.

It appears from perusal of other notifications in the press of the formation of the Imperial Defence College that its object is apt to be confused with that of the Staff Colleges and of a combined Staff College, the introduction of which has several times been discussed.

The Staff Colleges not only turn out each year a certain number of trained Staff Officers for the junior staff appointments of their respective Services but they also give training in the higher science of war to those officers, who will one day be called upon to fill the higher appointments in their particular Service.

The idea of a combined Staff College is that officers from all 3 Services should study these problems of war together, but it has been decided that this object of combined study can be attained by the attachment of officers to the Staff Colleges of the other Services, which is now being done.

The Imperial Defence College will not attempt to teach its students the conduct of war as practised by their own Service ; its object will be to broaden their ideas of war to include those of the other Services and Dominions and to create an Imperial Strategy.

India is sending two Indian Army Officers to the first course.

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The winner of the United Service Institution of India Gold Medal Prize Essay, and Rs. 150 gratuity, is announced in this number as is the subject for next year's Essay.

There were very few competitors last year for the Gold Medal and only 26 for the Bertrand Stewart £100 Prize Essay, the subject and conditions of which are published in the Army Quarterly Journal.

It is a great pity that more officers do not compete in these essay-writing competitions, especially those officers working for the Staff College.

It was a noticeable weakness among officers attending this year's "Backward Boys" courses that their English composition and powers of expression were bad.

There is nothing like practice to improve these and it is hoped that more officers will compete for the U. S. I. Gold Medal next year.

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The following lectures were held under the auspices of the United Service Institution in Simla during July and August :—

| Subject. | Lecturer. | Chairman. |
|---|--|--|
| 1 Bolshevism .. | Colonel M. Saunders, D.S.O. | Lt.-General Sir Andrew Skeen, K.C.B., K.C.I.E., C.M.G. |
| 2 Mechanical Develop- ments. | Colonel on the Staff R. J. Collins, C.M.G., D.S.O. | Major-General C. N. Macmullen, C.B., C.M.G., C.I.E., D.S.O. |
| 3 Publicity and Propa- ganda. | J. Coatman, Esquire. | Sir Dennys Bray, K.C.I.E., C.S.I., C.B.E. |
| 4 The Evolution of the Socialist Movement. | Lt.-Colonel R. H. Haining, D.S.O., R.A. | The Hon'ble Mr. J. Crerar, C.S.I., C.I.E., I.C.S. |
| 5 Trade Unions in Great Britain. | Lt.-Colonel R. H. Haining, D.S.O., R.A. | The Hon'ble Sir Alexan- der Muddiman, Kt., C.S.I., C.I.E. |
| 6 Railway Organisation in India. | Sir Clement Hindley, Kt. | The Hon'ble Sir Charles Innes, K.C.S.I., C.I.E., I.C.S. |
| 7 Iraq .. | Major F.A.G. Rough- ton. | Major-General Sir Walter S. Leslie, K.B.E., C.B., C.M.G., D.S.O. |
| 8 Air Developments .. | Squadron Leader E. J. Hodson, R.A.F. | Lt.-General Sir Andrew Skeen, K.C.B., K.C.I.E., C.M.G. |

Admission to the body of the theatre was limited to members of the United Service Institution of India and the gallery was free to the public.

The lectures were extremely interesting and surprisingly well attended.

Our thanks are due, not only to the lecturers themselves, but to the chairmen, who helped considerably to make them a success, and to the public, whose interest did much to make them worth while.

The lecture on "Mechanical Developments" appears in full in this number, and some of the other lectures will be published later.

Squadron Leader Hodson, in his lecture on "Air Developments", produced a series of most interesting slides of all the latest types of aeroplanes.

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The training of officers in India, especially the Indian Army officer, has always been a difficult problem and has become all the more so now that training is becoming more complicated and a higher standard is demanded, while commanding officers have less time to teach.

The difficulty of the commanding officer has been realised as regards the individual training of the rank and file, by the institution of Army Schools which train his instructors for him and they then pass on their learning in the Unit. The crammer and the recently instituted Staff College courses have largely taken off his shoulders any responsibility for preparing his officers for the Staff College Examination and it is now considered in some quarters that Junior Officers' Schools should be started to help commanding officers still further by relieving them of the onus of preparing their officers for promotion examinations.

The training of his officers is recognised as being a commanding officer's most important duty in the Individual Training season but conditions in India differ considerably from those obtaining at Home.

To start with, the hot weather in India is anything but stimulating to the brain, the afternoons are not suited to lectures and discussions, and in the evenings officers must get out and take exercise if they are to keep fit.

At Home battalions are very much under strength in men and there are plenty of officers; in India it is just the reverse as regards British battalions, and in the Indian Army the shortage of officers is always the chief obstacle to training.

The English winter is conducive to sand model lectures, tactical schemes and the study of the manuals and of military history; the Indian hot weather makes concentration on such subjects an effort.

Now that a much wider knowledge of the other arms is required of the junior regimental officer, and his promotion examinations contain questions regarding the employment of small forces of all arms, battalion tactical exercises without troops are hardly adequate.

The solution appears to lie in Brigade tactical exercises, and lectures and discussions arranged by the Brigade Staff to assist the Commanding Officer in what must be his most important duty in India as at Home—the training of his officers.

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India Army Order No. 128 of 1926 permits units to employ Indian Officers in the butts during the firing of classification practices.

This should be a great help and lessen the amount of work thrown on to the British Officer.

The order may well be extended in the near future to allow Indian Officers to superintend at the firing point also. Some units are still inclined to centralise all the instruction in the British officer with the result that he becomes rushed off his legs and, what is still worse, the Indian officer fails to become imbued with a due sense of his responsibilities.

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The new tactical schemes advertised in the last number of the Journal have been in great demand and it is hoped that we may now be able to add to them yearly and keep our stock really up-to-date.

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Colonel Collin's article on "Mechanicalisation" which appears in this number opens up a very wide field of thought. The advantages of mechanicalisation are obvious, the disadvantages, or rather the difficulties, though not at first so apparent, are none the less very real.

In the solution of every military problem or appreciation we should start with our object and keep that clear in our minds.

At first sight it may seem simple to decide on the object of our army and then to arm it and train it best to carry out that object.

Our Empire and our interests are, however, so wide and our possible theatres of operation so far apart and so varied that the problem is really far from easy.

Were our Expeditionary Force at Home simply intended to be used in Europe, as it was in the last war, we could go ahead with our organisation and training on a more or less settled plan; but we fully realise that it is just as likely or even *more* probable, that it will be required for the defence of our possessions in the East and this complicates the problem considerably.

Although it is essential that our small regular army should be equipped with every modern weapon, we first have to satisfy ourselves that such weapons are suited to the terrain of probable operations.

In India the problem of mechanicalisation is complicated by the indifference and ignorance of the civil population in military matters and by financial stringency aggravated by the economic backwardness of India.

Lack of money is a very great stumbling block ; we are extremely unlikely to get our Army grant increased to any great extent to add mechanical appliances, which means that we can only exchange the old for the new, and the old all appears so essential that it is difficult to know what to let go.

The problem is by no means insoluble but we must hasten slowly, and, while keeping our Army in India up-to-date in every possible way, we must ensure that every mechanical invention we propose to adopt first proves itself on the terrain and under the conditions where we shall require to use it.

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The proposed inauguration of a fortnightly air service between Cairo and Karachi by the Imperial Airways Company now seems to be materialising.

Aeroplanes are to leave Cairo on Wednesday after arrival of the English mail, reach Baghdad on Thursday and Karachi on Saturday. It is proposed that the service should commence in January 1927.

Up to the present the other great powers of Europe have shown more enthusiasm for and enterprise in the development of civil aviation.

The institution of this new eastern air route and the example set us by that wonderful air pilot, Mr. Cobham may, however, help to stimulate the public imagination.

There is no doubt that the development of aviation has been extraordinarily rapid and the public are apt to be unduly alarmed at the number of accidents which occur and forget that in proportion to the number of hours flown, they are infinitesimal.

As soon as an aeroplane can be invented which can land in a small space at a low speed the popularity of civil aviation will be assured.

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As foretold in our last Editorial the cricket test matches have been followed with the greatest interest all over the Empire, and it is not too much to say that to the British public they assumed almost as much significance as the General Strike.

A lot of ill-advised and ill-considered literature has been written about them, nearly all by journalistic-minded non-cricketers, but that does not detract from the main point which is that they were fought out in the best spirit, with the greatest keenness and determination, and England, after many lean years, has at last emerged victorious.

There appears to be no doubt that four days is the proper length of time for a test match in England and five in Australia. At one time it seemed that in these matches the bat had beaten the ball to such an extent that some alteration of the laws of the game would have to be made, such as the introduction of four stumps or a smaller ball. We can only be thankful that nothing so drastic has occurred ; even now the compilation of 50 runs on a real bumpy Punjab wicket or, worse still, on a sticky wicket at Annandale, with the remains of the polo ponies' hoof marks under the matting, is no easy matter, and after all cricket is first and foremost a game for the masses.

In India interest is centred on the coming visit of the M.C.C. XI. They are a really strong XI, almost good enough to take the field against Australia, and it is unlikely that we shall be able to put up against them any very serious opposition, except perhaps in Calcutta and Bombay. The cricket season in the Punjab will hardly have started by the second week in November when the Army match is to be played in Lahore, while the visitors will have had the benefit of a full season's cricket at Home. Every endeavour is, however, being made to collect as strong a side as possible which we hope may be at any rate strong enough to make the visitors give of their best.

The Indian Army Hockey team, after a most successful tour in New Zealand, has returned to India and finally broken up at Lahore.

They were everywhere greeted with the greatest enthusiasm, both in New Zealand and Australia, and the most generous hospitality was shown them wherever they went. The number of spectators who turned up to watch the matches was almost incredible and the greatest interest was shown in the team and their methods of play.

The tour cannot but have enhanced the already friendly feelings existing between New Zealand and the Indian Army.

As regards the hockey—although the test match rubber was only drawn, the other matches were rather one-sided. The team scored 390 goals and only had 37 scored against them in the 37 matches they played.

This says a good deal for Indian Army Hockey, but we must not be carried away by enthusiastic press reports—to the effect that many of the team would walk into any international side in the world, and other such eulogies—to regard them as world beaters; once they had settled down they developed into a first class XI, all extremely fit and playing well together, with, perhaps, one really exceptional player, the centre forward, and their pace, quickness and team play proved too much for all the local sides who opposed them.

Their play and their conduct on and off the field were up to the best traditions of pre-war Indian Army Hockey, and will undoubtedly do much to improve the standard of hockey in New Zealand.

Certain remarks in the press disparaging the refereeing are regrettable and their publication has been taken exception to by the members of the team themselves.

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Members are reminded that books taken from the United Service Institution library may not be passed on from one member to another. There is often a waiting list for a popular book and they must be returned to the library within the required month.

THE PROBLEM OF IMPERIAL DEFENCE,

BY

LIEUT.-COLONEL R. H. HAINING, D.S.O., R.A.

There is a significant passage in the instructions of Fenelon (his preceptor) to the young Duke of Burgundy, then heir to the French throne.

“Neighbouring States,” he writes, “are not only under the obligation of treating each other according to the rules of justice and good faith; they ought also, for their individual good as well as in the common interest, to form a kind of society, a republic, as it were. It is necessary to realise that in the long run the greater Powers always prevail and overthrow the less, if the latter do not answer back by uniting to form a balancing force. We see that all nations are striving to outdo their neighbours. So each must be perpetually on guard to prevent the excessive aggrandisement of those that surround it. There is nothing morally wrong in this.....it is, in one word, to work for liberty, peace, and public safety. The expansion of one nation beyond a certain limit disturbs the balance of the system of which it forms a member. Anything which upsets or disturbs the general system of Europe is dangerous indeed, and drags after it infinite evil.”

In these words one of the wisest men of his time describes the force which has been a dominating factor in European politics for four hundred years—the principle of the Balance of Power.

At first this principle operated mechanically and unconsciously; in more modern times it has been invoked deliberately. Louis XIV and Napoleon, the French Revolution and the Holy Alliance, came alike under its influence; it was the origin of the Monroe

Doctrine, and the leading factor in the inception of the Concert of Europe, just as it is the *fons te origo* of the League of Nations to-day.

Great Britain first—and later the British Empire,—became more and more intimately concerned with this principle until we find that the British Nation became at length the decisive factor in the problem of the Balance of Power in Europe.

History, we are told, repeats itself; for this reason it is necessary that we should review briefly the part played by the Mother Country and by the British Empire, in the development of this principle of the Balance of Power, up to the outbreak of the war in 1914, so that we may draw deductions for the future.

The Armada welded Britain into a nation, with the will, ability and power to expand overseas, and to take her place beside the older established nations of Southern Europe. The mastery of the sea and the spirit of adventure led England to think of Empire. "Here begins the modern History of England." For centuries, the unification of the British Isles had occupied the attention of its rulers; when this was accomplished, at the beginning of the seventeenth century, Britain could look beyond these islands to Empire. With each succeeding century, the Empire has expanded, except in the closing years of the eighteenth century, when the American Colonies were lost; in turn, our rivals Portugal, Spain, Holland and France had declined or been defeated. By the end of the Napoleonic wars Great Britain stood out, pre-eminently, as the colonising Power of the world.

But, as yet, Empire was unthought of: the colonies were looked upon, in Britain, as commercial ventures, ripe and meet for taxation, but inarticulate and without representation in the nation's councils; nevertheless, after the Congress of Vienna, their existence unconsciously exercised an influence on British policy. In the first half of the XIX century, after Waterloo, we aimed at making our influence felt in the councils of Europe, although strictly limiting the exercise of our power; and, whilst we endeavoured to preserve the balance between competing countries, we yet upheld, in a liberal spirit, the rights of small nations struggling for existence.

In the latter half of the century, our growing interest in colonisation, and our recognition of the rights of Colonists—slowly awakened by the debacle of 1783,—had the effect of withdrawing us, as a nation, from the councils of Europe; we tried the policy of splendid isolation. Fresh influences had arisen; influences which became apparent about 1880, and which Disraeli, with that wonderful power of second sight which characterised him, had pointed out ten years or more before:—

“The abstention of England from any unnecessary interference in the affairs of Europe is the consequence, not of her decline of power but of her increased strength. England is no longer a mere European Power; she is the metropolis of a great maritime empire, extending to the boundaries of the furthest ocean. It is not because England has taken refuge in a state of apathy that she now almost systematically declines to interfere in the affairs of the Continent of Europe. England is as ready and as willing to interfere as in old days when the necessity of her position requires it. There is no Power, indeed, that interferes more than England. She interferes in Asia, because she is really more an Asiatic Power than a European. She interferes in Australia, in Africa, and New Zealand, where she carries on war often on a great scale. Therefore, it is not because England does not recognise her duty to interfere in the affairs of the Continent of Europe that persons are justified in declaring that she has relinquished her imperial position, and has taken refuge in the *otium cum dignitate* which agrees with the decline of life, of power and of prosperity. On the contrary, she has a greater sphere of action than any European Power, and she has duties devolving upon her on a much larger scale. Not that we can overlook with indifference upon what takes place on the Continent. We are interested in the peace and prosperity of Europe, and I do not say that there may not be occasions on which it may be the duty of England to interfere in European wars.”

The old indifference to the Colonies—so typical of earlier times—began to pass away, and was replaced by Imperialism,—of which the outstanding leaders were Joseph Chamberlain and Cecil Rhodes.

During the years following Disraeli's speech we held more and more aloof from Europe—as witness our attitude during the Franco-German war in 1870, and the settlement of the problem of the German Empire. But events forced us to come back into Europe—and it is important to note that our reviving interest in European affairs arose not directly from European problems but as the inevitable result of our Imperial expansion. Where conflict and clash arose in any part of the world, the key was to be found in the relationship of the European States to one another. The Suez Canal, Egypt, North Africa and Afghanistan, each and all, when in the limelight, affected the chancelleries of Europe. It is instructive to consider the words of Sir Edward Grey in his address to the Prime Ministers and Dominion Delegates during the Imperial Conference in 1911:—

“That which really determines the foreign policy of this country is sea power. It is the naval question which underlies the whole of our European foreign policy, and more than our European foreign policy.....So long as the maintenance of sea power and the maintenance and control of sea connections is the underlying motive of our policy in Europe, it is obvious how that is a common interest between us at home and all the Dominions.”

And again, Mr. Asquith (as he then was), in considering the position of Great Britain with regard to the development of the Entente, says:—

“The policy of isolation has been tried and found wanting. For an Insular Power with a world-wide Empire and itself the centre of international finance and exchange, that policy is foredoomed in the long run to failure.”

When the colonies first developed into the British Empire there was no machinery for consultation or for joint action. But the need for a closer articulation between the various parts of the Empire began to be recognised even before the development of the Imperialism of the Eighties; and in 1887 the first Colonial Conference was held. This, in turn, was followed by further conferences, which were largely taken up with the discussion of Naval and Military matters; the reason was obvious—all developments showed the danger of the growing power of Germany; and the principle of the Balance of Power, no less than Imperial Defence, demanded concerted

measures. In 1904 the Committee of Imperial Defence was set up in an advisory capacity as a co-ordinating head of all departments in defence questions.

Shortly before 1914, when critical times were obviously ahead, a standing Sub-Committee was formed for the purpose of co-ordinating the naval, military and civil resources of the State to meet war emergency. But it is worthy of note that the majority of Imperial Defence questions were considered without any Dominion representation. The recognition of the existence of the Empire did not, so far, include, as a *sine qua non*, the recognition of the right of the component parts of that Empire to be consulted with regard to the Imperial military policy.

Such then is a brief but essential resumé of the development of the British Empire up to the outbreak of the Great War. Of what did this Empire consist in 1914? It included land in every continent, and islands in every ocean, to the extent of thirteen million square miles,—approximately one quarter of the earth's land surface. In the Empire lived four hundred and sixty million people,—a quarter of the world's population,—of whom sixty millions were white. Of this grand total, India, with three hundred and nineteen millions contained three-quarters of the population of the Empire.

This Empire of heterogeneous peoples and of a diversity of lands, climates and conditions, was divided into five distinct groups, for government:—

The United Kingdom ;

The Self-governing Dominions ;

British India ;

Crown Colonies ;

Territories under chartered companies ; with an outer fringe of protectorates and spheres of influence.

In contact with European nations in Africa, and with an ever-increasing commercial competition in the East and Far East, the British attitude towards any collisions outside Europe influenced relations between the remaining European Powers, which were dividing, slowly but progressively, during the first decade of the twentieth century, into two camps. Germany's desire for "a place in the sun" to the exclusion of all others marked her as our opponent, eventually, in Europe.

When it came, the war was from its outset what all our great wars have been, one fought for the maintenance of the Balance of Power in Europe; but in entering on this war we were none the less defending not only our own vital interests but those of all the Dominions. For England must always be the deciding factor in the Balance of Power in Europe. It had always been said that England would not enter into a war about the Balkans. This was supposed to be a cardinal principle of our policy; and yet the time came when Empire soldiers fought and died on the heights of Gallipoli in a conflict in which Greece and Bulgaria might seem most intimately concerned. For now the Balance of Power in the Balkans implied the control of Constantinople and the Straits, and this again meant the safeguarding or the endangering of our naval position in the Levant, which again involved the Suez Canal, the Persian Gulf, and the road to India and Australia. So closely is the Empire linked together, that the results of clashing in Europe ricochet and reverberate throughout the remotest parts of the world.

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When we consider the post-war situation we encounter one very definite change.

Until August 1914, it had been growing daily more apparent that we must cross swords with Germany for our existence as an Empire. After the Great War was over, there was no such outstanding problem before us. Decisions as to how the defence of the Empire should be organised, and what preparations should be made were the more difficult because of the uncertainty regarding the Power or Powers against whom the Empire needed protection. It is desirable, therefore, to consider, before all else, what changes in the Balance of Power took place as a result of the war.

In Europe, instead of the two armed camps of pre-war days, we find only one Power capable of prosecuting a first class war, and that Power is France, our ally. While we may rightly deprecate any attempt to harm or in any way to belittle the tie that binds Great Britain and France, we should be negligent, in a general consideration of the defence of the Empire, if we failed to explore all sources of possible attack.

France of to-day dominates Europe militarily. She is the only nation able, and equipped, to go to war at short notice. She has made

herself, as a result of her experiences in the war, unassailable by land or air. But she is not aggressive, as she was a hundred and twenty years ago, or as Germany and Russia were in pre-war days; she maintains a large military organisation, because, with a decreasing population, she is confronted by a prolific and bitterly hostile Germany. Her paramount aim, overriding all other consideration, is to keep Germany down, and to prevent her from ever getting up again. The outstanding feature in European politics, now, is France's desire for security combined with her fear of Germany. In such circumstances the British Navy and British credit are essential to France. Great Britain, for her part, is interested in the predominance of France, to act as a buffer between the British Empire and Germany and Russia, which latter Power is dormant, but a potential menace. We may conclude, therefore, that one effect of the war has been, for the time being at least, to remove, to a great extent, the causes of anxiety in Europe, with regard to the Empire, which existed in pre-war days.

If we survey the world outside Europe, we find that there are two Powers which have to be considered very seriously in relation to the defence of the Empire. These are Japan and the United States of America, with the Pacific Ocean common to each. Japan has increased her wealth, developed her character, and extended her ambition as a result of the war. Her rapid increase in population has made the question of her food supply a matter of vital importance, and of increasing dependence on outside resources. Further, for her success as an industrial nation, she needs far more raw material than is available within her Empire; yet to buy her food, she must develop her industries in order to obtain the means to pay for it. In consequence, both her financial and her economic position are bad—and her remedy seems to lie in emigration or Imperial expansion; but the colour question impedes emigration into those countries where she most desires to send her citizens. These facts, though justifying various deductions as to her possible action, do not in any way mark her out as definitely opposed to the British Empire. Though no longer our avowed ally—since the termination of her alliance with us—she is yet our very good friend; and her peculiar dependence on outside resources for the materials necessary for a modern war—coupled with the fact that no reason why, or place where, we are bound to clash is apparent—makes her

ability to wage a first-class war less of a menace to the British Empire than might appear at a first glance.

The effect of the war on the United States as a nation has been to increase her wealth, and to make her realise her power. Her population is also an increasing one; and she has realised, to some extent, the meaning of war on a large scale—whereas in pre-war days her knowledge of war of the European type was slight or non-existent. Now, preparations and organisation for war are taken as a very serious matter, especially on the industrial and scientific side. In fact, being almost self-supporting in warlike materials, she is, with her wealth and large population, best able, of all the countries in the world, to wage a first-class war; added to this, she is now in all probability the most imperialistic of nations. But we cannot, nor is there any reason that we should, contemplate her as a danger to the British Empire.

Considering all the facts, we are entitled to make the deduction that, owing to the modifications in the Balance of Power, there is no inevitable outstanding problem—as there was in 1914—for the British Empire to face.

Nevertheless we can draw certain inferences as to the likely sphere of operations of a great war, should one occur. What is constantly referred to as “The Pacific Problem” is, in effect, the shifting of the centre of gravity of interests from Europe to the Pacific. But there is this big difference from pre-war days. Then, as has been pointed out, a clash of interests in far-off lands mainly affected Europe, and was decided in Europe, to a greater or a less degree. But now the interests in the Pacific will be decided in the Pacific because two of the three nations capable of carrying on war on a large scale are situated there. If then, other necessary factors, such as the need for expansion, racial differences, or commercial rivalry, reach a certain pitch, war may ensue; and, as the Balance of Power has shifted to the Pacific, such war will open in all probability in the Pacific. So much we can assume as a result of the Great War; and on such a knowledge of the changes in the Balance of Power we are able to base our principles of Imperial Defence, which must, in the absence of a particular problem, be general.

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It is difficult to gauge the influence on a problem of so widespread a nature as Imperial Defence, of warlike weapons, *qua* weapons.

Always the means are subordinate to the end, and procedure is ancillary to policy. All history points the moral that new weapons,—or new developments of old weapons—create their own remedy. On land it is, of course, true that mechanicalisation and the combination of fire-power and mobility which it provides—as in the case of the tank, the armoured car, and the mechanicalised artillery—tend to reduce the personnel required in any particular garrison, whether for internal security or against external aggression; and it is possible, or even probable, that this tendency may abolish the battalion as it is now known, and introduce formations consisting of a minimum of men, carried in mechanically propelled armoured vehicles, with a maximum of fire-power. But the decision with regard to the organisation for defence must await the decision of the general problem, to which it is secondary. The same argument holds with regard to the use of gas. The possibility of its use offensively against us; the need for protection in that event; and the policy of its use by us, if first used against us, are all part of the main problem, which need discussion and decision. If, and when, a decision is reached, steps can be taken to give effect to the policy; but to decide the procedure or the organisation before a policy is formulated, is to put the cart before the horse.

There are, however, certain developments in the method of warfare which have a very far-reaching effect on the problem of Imperial Defence. These may be classified under two headings:—Submarine Warfare and Aircraft. To all intents and purposes, these are new methods of warfare. The important difference between them and new weapons, lies in the fact that the introduction of submarines and aircraft, as a practical fighting proposition, has opened up a plan of operations not before regarded. Land-fighting with all its developments, and counter-developments, is still land-fighting; battles on the sea follow the same general course, whether with triremes, three deckers or modern battleships; but fighting under the sea and in the air, and the engagement of land or sea targets from under the sea or from the air, introduce new elements and fresh developments for which few, if any, precedents exist, and for which thorough investigation is necessary.

The limitation of armaments agreed upon since 1918 has not affected the submarine; and it is true that submarines are of greater value to a nation with a weak rather than to one with a strong

Navy. Hence the submarine is likely to increase in importance rather than to diminish. If, on the other hand, we consider the scattered nature of our Empire; the dependence of its highly populated industrial centre on countries across the seas, for the supply of food; and the paucity of capital ships available—necessitating the despatch of a Fleet, in certain eventualities, from the West to the East, with the risks attendant on it on the journey—we are able to realise that the submarine, as a weapon of blockade or offence, has complicated our problems in no small degree.

When we consider aircraft for Imperial Defence we must do so from the point of view of its co-operation with the other services. Empire defence demands co-operation and co-ordination throughout, from all the fighting services. Practically every warlike operation of any magnitude we may now be called upon to carry out is a combined operation. The Army needs the Navy to take it overseas; the Navy needs bases from which to operate, and so needs an army to capture or to protect them. Similarly, both the Navy and Army need eyes, which the air alone can provide; the air, in its turn, needs transporting to its bases by the Navy; and when established there, needs the Army, for protection, or illumination of areas, or for Anti-Aircraft Fire, or for all three purposes. It is, of course, quite true that it is claimed that the defence of outlying portions of the Empire, or of territories for which the Empire is responsible, can be thoroughly undertaken by a force that is primarily employed in the air.

The question is under experiment, and therefore of much interest: but in the event of the experiment proving successful, the need of troops for ground protection, and of the Navy for transport, if not of machines, at least of stores and other impedimenta makes it obvious that the Imperial Defence problem is the rôle of the Combined Services.

One of the main principles in the employment of aircraft is held to be that all air forces must be maintained in a state of fluidity and it is argued that it is a waste of power normally to anchor air forces in any place overseas, earmarked for the defence of that particular spot. This principle necessitates a chain of stations on British soil throughout the world to enable air reinforcements to be sent from some central strategic centre to a threatened point. This, in turn, necessitates that the places on this chain are available

when required, and sufficiently protected. Yet another consideration is the co-operation of aircraft with long range artillery for defence. It is clear that the value of long range artillery is much reduced unless efficient air observation of the effect of the fire is available. As this fire may be needed at the first moment of hostilities, the logical conclusion is that the aircraft concerned should be available with the guns in time of peace, in anticipation of the need ; such a conclusion is at variance with the principle of complete fluidity, already alluded to : and the matter is one for adjustment when the general policy to be adopted for Imperial Defence is laid down. Again, aircraft carriers—limited in number if over ten thousand tons, by post-war agreement—are needed for co-operation with the Navy ; but it may happen that they will provide the sole means of air support to cover a military landing, at which time local air superiority is essential. Thus the whole question of the air, as a third service, in Imperial problems, is an involved one, and, as there is little practical experience upon which to fall back, demands clear and logical thought.

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In discussing post-war changes and methods, we must include two developments—the one technical, the other political,—which have affected our problem immensely. The substitution of oil fuel for coal in ships, and the Resolutions of the Washington Conference have a very real bearing on both the Economic and the Military aspect of Imperial Defence.

The change, now practically universal, from coal to oil fuel in ships has increased their radius of action by practically fifty per cent. That is to say, with one filling of oil bunkers, a ship can go half as far again as with one filling of coal. This is a very valuable advantage, especially to men of war ; but the disadvantage is that oil is not produced, to any appreciable extent, in Great Britain ; and, further, that only four per cent. of the world's supply is found within the Empire. Our commitments abroad are therefore increased by the necessity for protecting the supplies of oil for the use of the Navy. The present policy is to store oil in places which are either British possessions or likely to be friendly ; but the formation of these depôts is costly, and entails an appreciably long period of time before they can be established fully. Further, oil in storage is more vulnerable than coal ; in consequence this necessitates increased protection, especially against damage from the air.

One of our greatest assets in the last war was our production of coal; we were enabled to trade on this to such an extent that not only as a condition of obtaining bunker coal, did we make neutral nations carry cargoes for us as and where required; but also, we were enabled to drive certain companies or even countries off the sea, because they would not agree to our restrictions, and were unable to obtain bunker supplies elsewhere.

This was a very powerful economic factor, especially for an Empire so dependent on the sea for its existence. Now the conditions are all changed, and we might conceivably be in the position, in the next war, in which we placed the recalcitrant countries in the last war. This, perhaps, is unlikely, because although we are not oil producers ourselves in the Empire to any extent, yet oil does lie favourably for us, athwart our communications; and is in hands which may reasonably be relied upon as likely to be friendly. Yet the fact remains that the advantages conferred by oil as regards steaming radius, are seriously counter-balanced by other considerations. In addition, the bases where oil is stored cannot be sufficiently numerous to do away with the need for oilers following the Navy wherever it goes. Oilers, like colliers of old, are defenceless and need protection, and so add not only to the size of a fleet operating at a distance, but also detract from its speed, being slow-moving vessels.

With the disappearance of the German fleet off the High Seas, Great Britain was left superior to any possible European naval combination, and thus secure on home waters, except for submarines.

This did away with the fear of invasion by land; but did not, of course, remove the danger of the interception of our seaborne food supply. Nevertheless, the urgent need for a strong fleet in the Atlantic and North Sea disappeared, thus enabling our main fleet to operate further from the island centre of the Empire.

On the other hand, the acceptance by us at the Washington Conference in 1922 of a one-power standard for our Navy made it patently impossible for us to effect naval concentrations of any strength in the East and the West at one and the same time. This limitation was further accentuated by the fact that the Washington Conference, as a "set-off" for the lapse of the Anglo-Japanese Treaty, laid down a *status quo* in the Pacific which made Japan supreme in Eastern waters.

The practical effect of these restrictions on our naval forces is that bases on our lines of Imperial communications have become more important than they ever were, for on their security and availability depends the life of our overseas' possessions. From some strategical centre, or centres, must radiate forces to reinforce or relieve outposts of Empire; and the route for these forces must be such that they can proceed in the minimum of time, and with the fewest obstacles or least risk of delay.

The more striking of the post-war naval developments which modify our present problem of Imperial Defence may, therefore, be summed up as follows:—The Balance of Power has shifted from Europe into the Pacific. This demands that we are able to place a fleet in the Pacific.

We have agreed to naval limitations which do not allow of our maintaining a fleet in Europe and also in the East at one and the same time.

The substitution of oil for coal fuel renders the movement of our fleet dependent on oil supplies, stored on its route, and capable of easy replenishment. In this we are handicapped in that we produce only one twenty-fifth of the world's supply of oil in the Empire. Finally, the submarine remains a powerful menace to the food supply of Great Britain.

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We may now proceed to consider on what general principles,—in default of particular ones,—we must base our policy for Imperial Defence.

Great Britain is the hub of the Empire. In this small and densely populated island, which depends for food on sea-borne supplies, are concentrated the control of policy, its principal instruments of defence, its chief sources of manpower, and its principal manufactures of munitions for war. Here, too, is the financial strength of the Empire. All these essentials are contained in a country which is in increasingly dangerous proximity to the continent, and is losing, or perhaps has lost, the security formerly afforded by its insular position.

An outstanding feature of post-war progress is the shrinkage of communications in terms of time, which began in the last century by steam and telegraphy, and has reached its present state through the agency of oil, petrol, aircraft and wireless.

This development, while drawing the Empire together into closer relationship, has greatly increased the sensitiveness and power to react of the whole, and has emphasised the vulnerability of the nerve centre or hub.

Again, each self-governing part of the Empire has its own particular and peculiar problems. They may be internal as in Africa; external but confined to one ocean, as in Australia and New Zealand; or economic as in Canada. Each has to be considered in the general plan, for the Dominions, by their war experience and record, are entitled to speak as equals with the Mother-Country in the Commonwealth of Nations.

The conclusion at which we arrive is that the aim for the future, as a fundamental basis on which to build our principles of defence, must be gradually to decentralise, as far as possible, the strength output now centralised in Great Britain. This is made easier by every improvement in our means of communications, provided the latter, if not under Imperial control, are well safeguarded.

As a corollary, control must be decentralised, but with a single direction. The aim must be for control to be less British and more Imperial. The difficulties are great in that it is not easy for parts of the Empire to take a general objective view of the whole, in contradistinction to their own particular problems. But it is rapidly becoming more realised throughout the Empire, that the component parts all bear a contingent liability for the whole. The manner in which this responsibility shall be converted into deeds is not, for the moment, clear; nor is it likely that one universal method will suit all the Dominions. Dominion Navies,—and the same restrictions would hold good in the case of an Indian Navy—can as a general rule, be only sufficient for local and limited protection of the Dominion concerned; this is clear when the relationship of the man power and wealth of the Dominions is compared with that of Great Britain. At the same time it is manifestly fair that each portion of the Empire should contribute in some degree to its own protection. Possibly monetary payments into the Imperial Exchequer by Dominions in place of providing their own Naval Defence, and the absorption on favourable terms of the surplus population of Great Britain into Dominions which are in need of population, are, at the moment, the most suitable forms of reciprocal action.

A further consideration is the Empire's responsibility, collectively and individually, for mandated territories.

As a result of the war, the British Empire was greatly increased by the addition of territory, thus continuing the examples set by the Peace of Utrecht in 1713, of Paris in 1763, and of Vienna in 1815, from each of which Britain's power increased by fresh colonial holdings. But the Treaty of Versailles in 1919 created a departure from previous decisions. The Allied Powers had not fought for aggrandisement or gain, but on moral grounds; while, therefore, colonies and dependencies of the Central Powers could not be restored to them the situation as to how these holdings should be disposed of was one of some difficulty. In those circumstances a mandatory system under the League of Nations was devised. Under this system Great Britain and her partners had huge new territories brought beneath their control and ruled, or supervised the ruling, of Iraq, Palestine, Trans-Jordania, Tanganyika, South-West Africa, New Guinea and the German islands in the Pacific South of the Equator. The terms of the mandate differ for individual cases; and in some cases, no fortifications or naval bases can be erected on mandated territory; so, although under Imperial control, such territories cannot be regarded otherwise than as an added responsibility. In some cases, a mandate was offered to a Dominion,—as in the case of German South-West Africa by South Africa, or of the German Samoan group of islands by New Zealand,—when direct annexation would have been preferred by the Dominion concerned; nevertheless the mandate, with its limitations and responsibility, was loyally accepted, and as loyally carried out.

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The problem may now be considered under three subheads :—

- (1) Defence of the Hub or Centre. (Home Defence).
- (2) Defence of Imperial Communications.
- (3) Defence of Dominions and Overseas' Possessions.

Home Defence.—Invasion by sea may be disregarded; but two dangers still remain :—The Submarine and Aircraft. The Submarine is a weapon of blockade, and eminently suitable for use against convoys from the West bringing the essential foodstuffs to Great Britain. This danger is accentuated by our inability to bring the same

pressure to bear on neutral ships, by means of coal control or embargo, as we could during the Great War. Defence against submarines is a naval study, and the prosecution of research and counter-measures of protection must be an essential feature of our policy; further, our naval force in home waters must be sufficient not only for local defence, but also to ensure reasonable protection to convoys. Air attack on Great Britain, to paralyse the nerve centre of the Empire, is a new and real danger. Hostile aircraft have only to fly short distances to reach vital points in Britain. The belt of sea between us and the Continent makes it extremely difficult to obtain sufficient warning of the approach of enemy aircraft; on the other hand, we have the advantage that we are liable to attack through one quarter only, though the susceptible area will increase as the range and power of aircraft increase. Defence against air attack is the duty of the Air Force, since attack by air can only be dealt with by counter-attack from the air, either directly or on hostile bases and aerodromes. At the same time, ground units are essential to give warning, to illuminate areas, and to engage hostile formations with A. A. fire. Considering the factors of distance and present air power, France alone could attack us. The French air arm is extensive and developed; but although such an attack, as already pointed out, is extremely improbable, yet no degree of improbability can justify such negligence on our part as to leave the country exposed to the possibility of a blow which it can neither parry nor return. Hence the scale of defence against the air must be based on affording Great Britain reasonable protection against the most powerful air forces that can attack us.

But no purely local defence against any form of attack can be sufficient alone. Just as the convoy system is insufficient unless it is working under cover of the fleet, and as part of the grand Naval Strategy, so the protection of our trade, our industrial centres, our docks and our sea approaches, against aerial attack, is part of the grand Air Strategy in the problem of Imperial Defence.

Defence of Imperial Communications.—The defence of the communications uniting various parts of the Empire is, in the main, a naval question, with an increasing degree of air protection of both air and sea routes. But both the Navy and the Air Force need bases on the Lines of Communication from which

to operate, and for these bases, in their turn, the assistance of the Army may be required, possibly to capture in the first instance, and certainly to hold against attack.

The likely sphere of operations being in the East, our communications lie through the Mediterranean and Suez Canal to the East; failing this route we must fall back on the old route by way of Africa and the Cape of Good Hope, which has grave disadvantages as regards facilities for fueling, and the time problem.

The Mediterranean Route has always been important, being our high road to India; its vulnerability on the flank by attack from the direction of the Dardanelles, is now much less than it was in 1914, on account of the non-existence, for all practical considerations, of a Russian fleet. But its vulnerability in other directions has become definitely greater, if we allow that the countries along its shores may possess aircraft or submarines, or both. With its indented coast line, the Mediterranean very greatly favours the employment of submarines, as we learnt by experience in the late war.

If we consider the Mediterranean from West to East we find there are three points in its length especially vulnerable:—

The Straits of Gibraltar—which can be dealt with from France, from the north shore of Africa, and perhaps from Spain.

The Narrow Waters, South of Italy (and in this connection we must bear in mind that Italy seems to have paid increased attention to the Mediterranean since the war, and has enlarged her naval and air bases).

The Northern Exits of the Suez Canal.—The Suez Canal, though international in character, could, in war, be rendered useless by blocking, which, as we know from experience, is not too difficult a matter to be practicable. Hence it is essential that our hold on Egypt be strong enough to secure the defence of the canal from Eastern aggression. For this reason Egypt is essentially a problem which interests all European states, and as far as we are concerned, may be regarded as the key to the Eastern portion of our Empire and the strategic centre for the Empire Reserve, especially of Aircraft.

The alternative route by the Cape of Good Hope to the East is half as long again as by the Mediterranean; and, in addition to

the increased strain on our shipping resources that such a route would entail, its use would greatly lengthen the critical period of exposure to attack to which our Eastern possessions would be subjected before relief became possible. Should the Suez Canal be closed, Sierra Leone would be much increased in importance. Its port of Freetown would become the principal naval port on the route. Freetown is well situated, as the only serious danger to it would be in the event of a war with France, whose territories are adjacent on all sides but one. It is an important fact that no oil is found in the African continent; so supplies for refuelling, which would be essential, would have to be brought, and escorted, from long distances.

In the Mediterranean there are Bases at Gibraltar, Malta, and in Egypt, designed to protect the three points noted above as particularly vulnerable.

The importance of Malta to the Empire cannot be over-estimated. It is the nearest naval base to the East, and shortens the voyage to the Far East by twelve days, when compared with the Channel Ports.

It is therefore easy to see that any European complications,—more especially with France or Italy,—at a time when we were called upon to send the Fleet to the East, would make the protection of the Mediterranean a very serious matter.

Once through the Suez Canal, the problem of our communications Eastward assumes a different aspect. The further the Fleet steams Eastwards, the more urgent is the need of a base where capital ships can be docked, stores obtained, and general re-organisation take place. It is essential that some rallying point be provided to enable the Fleet to operate in the Pacific; failing this, it will be unable to perform its function of reinforcing, and of restoring the situation generally. Malta, the capital-ship base, and strategic centre in the Mediterranean, is 8,000 miles away from Singapore, the gateway of the Pacific. India has no facilities for a Fleet, and, although the projected Indian Navy may do something towards developing her ports, the time is yet far distant before we can rely on this in any degree. From such considerations arises the demand for a Naval Base at Singapore; the controversy has been a long and hotly-debated one, and, in its course, the chief and most cogent arguments have become somewhat obscured. We may

therefore briefly recapitulate the arguments against the necessity for a Naval Base in the East, and then the arguments, presuming that a base is necessary,—against the selection of Singapore.

The reasons given for questioning the necessity for a base are two. Firstly, that Battleships are obsolete; and, secondly, that the establishment of a Base in Eastern waters is a menace to Japan. We may dismiss the first reason by stating that the weight of expert evidence does not support it. As regards the second reason, it is a fact that our intention was known at the time of the Washington Conference, and, with that knowledge, the Conference limited the sphere of armaments in the Far East by a *status quo* agreement (forming Article XIX of the “Treaty for the Limitation of Armaments”). As far as the British Empire was concerned, this agreement ordained that the *status quo* at the time of signing the Treaty, with regard to Fortifications and Naval Bases, should be maintained in.

“Hong Kong and the insular possessions which the British Empire now holds, or may hereafter acquire in the Pacific Ocean, East of the meridian of 110 deg. east longitude, except (a) adjacent to the coast of Canada, (b) the Commonwealth of Australia, and its territories, and (c) New Zealand.”

It is beyond our scope to enter into the difficulties imposed by the agreement on the signatories with regard to defensive measures in the Pacific; it is sufficient for the moment to say that Singapore lies outside the prescribed area; consequently the idea that the establishment of a Naval Base there would be a menace to Japan, appears absurd. Singapore lies 3,000 miles from Japan; and, in considering distances, we may compare the defences established at the Eastern End of the Panama Canal by the United States, formidable towards Europe, and primarily towards Great Britain, yet erected without any objection on our part.

Hong Kong, in pre-war days, was the sentinel and the guardian of the trade of the Empire in the Far East. Her strategic value was on the wane in direct proportion to the advance of modern war, and of inventions, by land, by sea, and by air; but the prohibition enacted by the agreement on its further development rightly left Great Britain free, by inference, to develop some new naval base in compensation. The necessary defensive measures proposed for

Singapore are based on our inherent right to occupy the most advantageous strategic position we can in the Southern Pacific, just as Japan occupies the strategic position in the north. Our object is to guard Empire trade interests in the Far East, and our strategy should be directed,—as it is claimed to be in this case,—towards keeping the Balance of Power, thus avoiding, rather than accentuating the possibility of war.

The objection that Singapore is not the right place for a base; and that Sydney, in a British Dominion, should be selected is ingenious but misleading. While we may allow that Sydney has an excellent harbour, needing little development; that Sydney is in a land of our own people, with outstanding advantages as regards climate, food supply, and protection from submarines; that the Australian, and not the China Pacific trade, is what matters to us; and similar arguments; yet the fact remains that a glance at the map will show that these arguments do not touch the root of the matter. While Sydney may possess all the advantages claimed, it is ruled out geographically. No fleet based on Sydney could prevent the capture of Singapore, involving the disappearance of our Eastern trade, and the harassing of our trade in the Indian Ocean. Singapore is the refuelling station between Ceylon and Australia, it flanks and effectively protects Australia and its trade routes; in addition a fleet based on it protects India, Burmah and the Persian Oilfields, and our trade routes Eastwards; none of these could be effectively protected by a Fleet based on Sydney.

That those most qualified to know believe that the strategical considerations are best met by the selection of Singapore, is borne out by the opinions on the subject expressed by the Prime Ministers of the Overseas Dominions mainly concerned in the Pacific.

Protection of Dominion and Overseas' Possessions.—The question of the protection of the Dominions has to a great extent, been dealt with when considering the Communications to them. Australia and New Zealand are concerned, almost entirely, with the Pacific problem; and for their protection a strong navy in the Far East, or available there at short notice—is essential.

South Africa is less concerned with protection against aggression outside, than with her internal development.

Canada has a long and vulnerable land frontier, bordering the United States of America; relying on her own resources in material and manpower, she could not attempt to defend it adequately; but the problem need not seriously be considered, as the economic and industrial relationship between the two countries, which has advanced with great strides since 1918, forms the best antidote to any suggestion of warlike operation.

Her sea-communications with Great Britain are direct and unassailable; but on her Pacific coast, she is naturally interested in the Far Eastern question.

Our *colonies*, of themselves, present no fresh problems when compared with their situation in 1914. The reduction of our naval and military forces affect them, not only by the reduction of their peace-time garrisons to a dangerously low level, if internal disturbances should occur,—as was well-instanced by the troubles in British North China in 1924,—but also by the prolongation of the time before reinforcement or relief can be expected; and by the increased and increasing difficulty of finding reinforcements, if required.

Our mandated territories, of which the most important are Iraq and Palestine, are a matter of much concern; they add to our liabilities and the calls on our forces, and are as yet unfitted to be freed from the supervision that a Mandate involves. In Palestine, there is only a gendarmerie; and the country, of itself, is unlikely to give much trouble. But it has, on its borders, countries which are always in a more or less disturbed state, and events outside may have their effect within Palestine. So long as the French remain in Syria, so long are they a buffer between the British Empire and the Turks. Should the French for any reason withdraw, it is conceivable that our position in Palestine, run as it is entirely under civil organisation—might become precarious: and our prestige, and our responsibility under the mandate might necessitate our taking action.

The situation in Mesopotamia, where the experiment of maintenance of order by the Air, assisted by troops on the ground, is being carried out, is one of interest, and it is upon the success of this experiment that the future organisation of the Defence of outlying parts of the Empire may depend. An air force (which is defenceless on the ground, and yet must depend for its ability to go up in

the air at all, on ground aerodromes, bases, stores and protection) does not seem most suited to deal, as a single and paramount arm, with guerillas, brigandage and such similar forms of irregular warfare as are employed in the sparsely populated and difficult parts of the Middle East.

Perhaps, of all the countries in the Empire, the problem of India is the one which demands the clearest thinking, and at the same time holds out the greatest possibilities. Weaker militarily than before the war (for reasons of economy), she has two main problems, Internal and External.

The Internal problem seems less acute now than immediately after the war, but is the one that can never be ignored on account of the diversity of peoples in the country and the increasing development of self-Government, bringing as it does on occasions, disappointment, disillusion, and resentment. The external problem, of aggression or invasion from the direction of Afghanistan, though perhaps not so obvious as when Russia was an organised power, is possibly more insidious, and so much the more a danger.

The Bolsheviks now endeavour to accomplish by secret propaganda what before was advocated by the power of the sword. Their policy is to win over the independent states on the frontier. Further, they endeavour to foment trouble internally by the same means; and, with our knowledge of the success of Bolshevism by these means around the Caspian Sea and in Central Asia, its activities in and towards India are no idle menace. The main conclusion to be derived from all the factors is, that should internal and external trouble in India occur simultaneously, or should the troops of the Indian Army become disaffected, it might require the despatch of the whole available Expeditionary force from Great Britain to India as a reinforcement.

The possibilities of India are, on the other hand, immense in the realm of Imperial Defence. The development of her own Navy might well be a prelude to the establishment of Naval Bases on her coast, which would be of inestimable value to a British fleet in Eastern waters. The position of India lends itself admirably to form a general base for stores, transport or organisation for operations in the East. Forces, military or air, located in India would be admirably situated as reinforcements for places further East. The

argument that troops raised in India are only available for Indian Defence, does not fit in with the theory of joint collective responsibility for Imperial Defence. It is possible that, along some such lines as we have indicated, we shall find a solution of the time and space problem which makes the timely support of the far parts of Empire one of such difficulty.

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So far, we have endeavoured to discuss the problem of Imperial Defence as it is to-day by a consideration of the changes brought about by the great war: but, throughout the survey, it is apparent that the fundamentals underlying the problem remain the same. This paper would, of necessity, be incomplete unless it contained some reflections on the conclusions we have reached.

If we consider contemporary economic conditions, we are forced to the conclusion that military matters,—and the word is used in its broadest sense,—do not count in these days when all attention is riveted on financial retrenchment combined with industrial development. The tendency is to forget that commercial prosperity depends on military security; that if the Empire is to exist as a dominant factor in the world, its unity must be both complete and real, and that our position in the world,—an Empire, but widely separated in its constituent parts,—demands a definite policy and an unswerving ideal. Our greatest defect now is a lack of perspective coupled with an absence of clear thinking. For this the politician and the press are alike responsible, but, we may allow, not deliberately. Popular government, misnamed democratic, forces those who should be leaders into the position of followers; the mass mind is incapable of appreciating the niceties of a problem, or of weighing divergent factors with care and consideration; yet the mass governs the situation at the polls, and decides the demand. In consequence the opinion of the politician, who depends on the polls for position and office, must be influenced by the view of those who support him; and the press must provide what is wanted, and not necessarily what is desirable. The power to lead, and the desire to educate, are submerged in the rivalry for position or circulation.

It is, therefore, more than ever a duty of the sailor, soldier, or airman to study the problems of the future, relieved as they are, of the necessity of competing, day by day, in the open market for the means of livelihood. It is to the fighting services, maintained in

time of peace for the fortunately rare occasions of war, that we must look for a clear unbiassed appreciation of the situation. Heaven knows that those who have seen modern war, and all it means, have no desire to see a repetition. But it is only by a sound strategy that we can attempt to avoid, or to delay, war. Human nature being what it is and human passions, feelings, and sentiment, being so easily aroused and played upon, we must be prepared even when the sky is set fair, for clouds; and, as experience has told us, these may arise instantly and overwhelmingly.

We see that the financial situation imposed on us by the strain of the great war and the urgent need for retrenchment in all directions, has reduced the fighting services to a dangerously low point. Our Navy is a shadow of its pre-war self, and clearly cannot meet the demands that Imperial Strategy may put upon it; the Army, with greater commitments more widely flung than ever, is weaker in personnel and guns, and in a transition stage; our air force gathers strength only for home defence, which out of the three constituents of the Imperial Defence problem, is the one least likely to materialise, but which appeals most strongly to the mass; of the strategical disposition of the Air Force for the maintenance of the Empire as a whole, little seems known, because, perhaps, little has been decided. And yet:—

“The British Empire is faced with problems differing widely from those of any other great power. In the first place it consists mainly of a group of self-governing communities of varying population and resources amongst whom military obligations must be equitably distributed. In the second place, unlike a continental power, whose army is designed to provide against one definite military contingency, the conditions under which it may be called upon to place a force in the field vary from a world war to a small expedition against an uncivilised enemy.”

and, as a corollary, it is stated:—

“That the responsibility of each portion of the Empire for maintaining or placing in the field its own share of the forces considered necessary shall be in accordance with an agreement arrived at between the home government and the governments of the self-governing dominions and communities and India.”

We have already referred to the possibilities of India, and the necessity for its governing bodies to realise their joint responsibility in Imperial matters. In the Dominions, the same policy of joint liability—to which lip service is often paid, must be realised. Since the great war the Dominions, militarily, have suffered even more than the Mother Country from reaction, based on a false sense of security. Not only is the general military standard in the Dominions lower than in 1914, but also there is no general acceptance of the liability for Empire maintenance.

We cannot count on united action, nor on any definite amount of assistance. No Dominion will commit itself till the time comes. In fact, the Canadian Premier is reported to have said (February 1925) that, when the time did come, he would first have a referendum. It must, in fairness, be owned that there is no surplus population in the Dominions with which to maintain a standing army, or to make one available at short notice; and further, the population being less, the incidence of taxation per head for such an army would be more than at home. But the fact remains that some form of Imperial Local Reserves, throughout the Empire, available for despatch from the nearest Dominion to the seat of trouble,—so obviating the delay and danger caused by thousands of miles of Communications—is in all probability the only way to deal with the remote, but still possible, contingency of trouble, East, West and centre, throughout the Empire, at one and the same time.

The Committee of Imperial Defence must be an Imperial rather than a National Interest; we cannot demand that the Dominions take their part and lot, unless we give them representation in the councils that decide the commitments. The constitution of the Committee must include Dominion representatives as permanent members.

It is of interest to recall the words of the Prime Minister of the United Kingdom when addressing the Dominion representatives at the Imperial Conference on Defence in August 1909:—

“The main problem of Imperial Defence is a single one, common to every part of the Empire. Once committed to war, it will be impossible to localise the theatre of war or the issues, which will be common to the Empire as a whole. A homogeneous organisation for Imperial Defence, and a single direction is therefore necessary, and this, I believe, will be recognised more and more in the future.”

Unity is Strength ; not only must we be united in name, as an Empire, but also in concerted action. The example of Unity in the Empire must be set by Unity in the Services. Each service must think in terms of the three services; and, as in practice this is a difficult ideal, it is essential, for the prosecution of successful Imperial Defence, that we have a combined staff, planning and thinking imperially, as one service.

Clear thinking is essential. The end first ; then the means. The tendency is to produce a development, and then to seek to apply it.

This is wrong. We must decide our problem, and what it entails ; and then what we need to carry it out.

With small, highly specialised, but really nucleous fighting forces we need experiment, research and a high standard of professional education, so that, if a crisis arises, and expansion is demanded, we may be able to produce the best of material, and also to cope with the training of the new entry, in the minimum of time and with the maximum of effect.

As an Empire, our commercial and industrial success depends on our security : our security in turn depends on our preparation and organisation. The sailor or soldier who sounds a warning is likely to be regarded as either a knave or a fool, until it is too late to benefit by his warning ; nevertheless it is the bounden duty of those who have studied the subject to emphasise the importance of prevision and of provision, of collective responsibility and of whole-hearted co-operation throughout the Empire.—“The stone shall cry out of the wall, and the beam out of the timber shall answer it.”

“SEALED PATTERN” FORMATIONS FOR THE CAVALRY SQUADRON IN MANŒUVRE.

BY MAJOR A. G. O. M. MAYNE, D. S. O.

There is a large body of opinion which holds that “Sealed Patterns” are apt to kill initiative.

It is argued that subordinate leaders and men try to adapt the “Patterns” they have been taught, without the necessary modifications, to every situation that arises. Such has not been the experience of the writer, who has found that subordinate leaders are generally quick to adapt and modify “Patterns” to suit varying conditions. They like to study a diagram and they understand it. They find it easier to amend the numbers, the distances and the dispositions given in the diagram than to evolve a new plan of their own. Moreover, it is better for a leader to commence a manœuvre on sound lines, even if he lacks the brains intelligently to modify the “Drill” than to make mistakes from the outset.

Again, sufficient stress cannot be laid on the importance of uniformity of doctrine, and this seems to be lacking in a marked degree in relation to the minor tactical operations of Cavalry.

Admittedly, there are numberless ways of conducting, say, an advanced guard. Probably each Regiment in the Army disposes its men on a slightly different system. More often than not, different systems prevail in the several Squadrons of a Regiment and the system in force is quite likely to be altered when Major “A” succeeds Captain “B” in command. Probably all the systems are sound, but it must be disheartening for subordinate leaders and men to find that the teachings which they absorbed and the systems which they practised to perfection last year under Captain “B” must now be forgotten and others learnt to please Major “A.” It is no exaggeration at all to say that this sort of thing happens frequently. That efficiency must suffer is only too obvious and it seems really necessary to aim at a closer standardization of teaching.

The writer does not advocate a “Drill” for every minor operation of war, but he does advocate a “Set-piece Pattern” for half a dozen or so of the most common operations which fall to the lot of a Cavalry Squadron.

When subordinate leaders and men are "Pattern-perfect" on the parade ground, then Squadron leaders should set practical problems in the field, firstly, to demonstrate the soundness of the drill taught and, secondly, to practise the variations which are necessitated by the ground and by enemy action.

In the subsequent pages, the writer deals with a few of the commonest of Cavalry actions and suggests dispositions which, to his mind, are suited to average conditions.

The composition of the Squadron is in accordance with War Establishments, India, 1923 :—*viz.*, Headquarters and 3 Sabre Troops of 3 sections each and 1 Hotch's gun troop of 3 guns. The plans described can readily be modified to suit the Home Organisation of 4 sabre troops each with an automatic rifle.

NOTES ON DIAGRAM I.—OFFICERS' PATROL.

1. The same formation is equally suitable for an N. C. O.'s long-distance patrol, which normally should comprise not less than 1 section.

2. A patrol of this strength can send 3 messages. When the first message has gone, the two men in rear go forward and become the EYES. When the second message has gone, the Officer, N. C. O. and horseholder are left alone and bring in the 3rd message themselves.

(Officer and 1 Section)

passengers)

in command

LEADER. watches for aeroplanes

gers

NOTES ON DIAGRAM II.—ADVANCED GUARD.

1. *Safety Track*—on Diagram is 1,600 yards. If 1,200 yards are required, 1 Troop throws out 1 section instead of 2. If 800 yards are required, the Squadron throws out only one Troop.

The intervals and distances are approximate only. In very open country, like the plains of Mesopotamia, the intervals can be considerably increased and the distances must be. In country where woods, villages and broken ground exist, delay and confusion result if intervals and distances are much in excess of those advocated.

2. *Conduct of Advanced Guard.*

(a) *Guiding Principle.*—Normally information should *NOT* be sent back. Section leaders should go *forward* to learn news from their EYES. Troop leaders should go *forward* to learn news from their section leaders. Squadron leaders should go *forward* to discuss the situation with Troop leaders.

Bounds.

(b) The Squadron leader should detail main bounds only. These should be long ones, probably 2 to 3 miles. Very often he can select them only from the map.

Intermediate bounds are decided upon by section leaders.

(c) *Action on conclusion of a bound—*

- (1) EYES halt. Probably one dismounts to obtain a better view from the roof of a hut, from a tree or from some other eminence. The other holds his horse.
- (2) Section leader joins one pair of EYES and his assistant joins the other pair. He discusses situation, decides on next intermediate bound and sends the EYES off *at a canter*.

Section leader is joined by his assistant.

- (3) By this time, the section leader has been joined by the Troop leader or his assistant, the Troop Sergeant. The latter receives the Section leaders report and gives any additional orders or instructions (such as change of direction or alteration of place &c). Effect can be given to such instructions by the Section leader when he meets the EYES at the next intermediate bound.

Section leader and his assistant then follow the EYES at a canter.

Troop leader is joined by his assistant.

- (4) Troop leader stays where he is till the Squadron leader for Squadron 2nd in Command comes up to discuss matters. He and his assistant then follow up sections at a canter.
- (5) Reserve Sections follow about 400 yards behind leading sections and 600 yards behind EYES.

Reserve Troop about 400 yards behind Reserve Sections.

Both close up when advanced sections are halted at the end of a bound. If advanced sections make an unusually long halt the Reserve Sections and Reserve Troop will close right up to them, unless specially ordered not to do so.

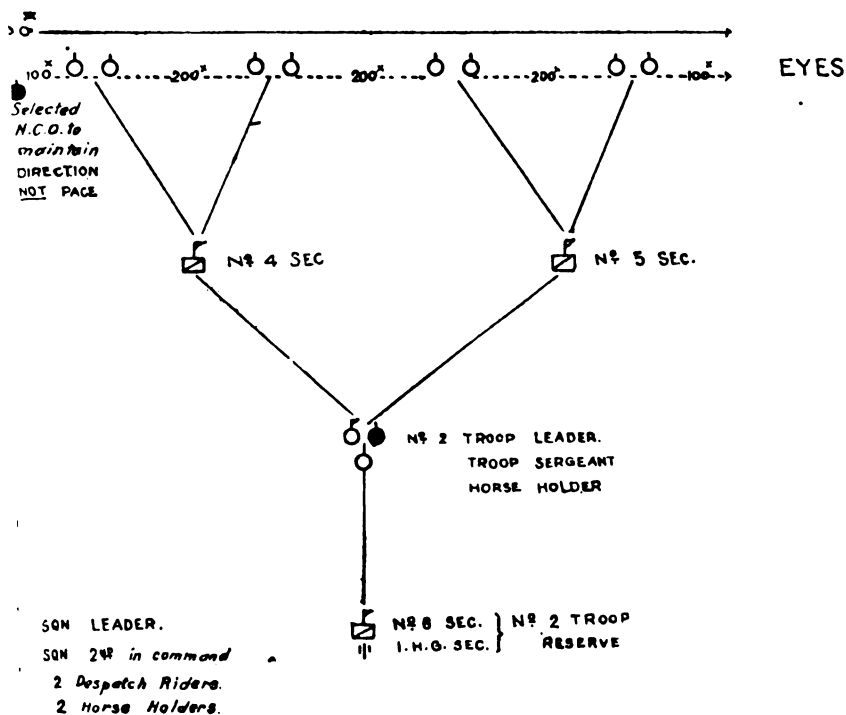
- (d) By this system the action of the advanced guard is under perfect control of the Squadron Leader. Without an order or a signal he can arrest the entire forward movement at the next intermediate bound, for neither the EYES, nor the section leaders, nor the Troop leaders may move on until visited by their immediate Superior.

Constant intercommunication is assured and, except when the situation demands instant action by the Troop or Squadron, it is never necessary for forward troops to gallop *back* with information gained. Forward troops can stay where they are and gain further information, knowing that their immediate Superior will arrive in a couple of minutes or so.

The system may appear to be slow, but it is *NOT*. If nothing is happening, the visits between the several leaders and their subordinates are very short. The pace is CANTER-HALT-CANTER. In normal country, the pace thus maintained by the EYES, the Section leaders, the Troop leaders, and the Squadron leader is such that the Reserve Section and Reserve Troop can maintain a steady advance at 6 or 7 miles an hour.

AM II

GUARD



NOTES ON DIAGRAM III.—RECONNAISSANCE ON A VILLAGE.

1. *Action of Forward Troop—*

1st phase.—The EYES of Nos 1 and 2 Sections arrive at bound about 400-500 yards from the village. One of each pair dismounts and looks round.

No. 1 Section leader arrives a minute or so later and sees that he has quite a difficult proposition to tackle. Before he “looses” his EYES again, he should spend a minute or two scanning the country through his field-glasses and forming a plan. Whilst he is doing this, the Troop leader arrives and appreciates the situation as follows :—

“It is necessary to push on quickly as possible, but if No. 1 Section gallops the village alone one of two things may happen. In the first place, the Section may suffer casualties without finding out any detailed information, in the second place, the enemy may bolt out from the back of the village and get away. It is better, in the circumstances, to make this a troop operation.”

2nd phase.—The Troop leader, therefore, decides on the movements depicted on the diagrams :—

| | |
|--|---|
| <i>No. 1 Section.</i> —To gallop to mound 300 yards EAST of village. | (1) To deal with any enemy retiring from village. |
|--|---|

| | |
|--|---|
| <i>No. 2 Section.</i> —To gallop to Copse 400 yards WEST of village. This section may already have done so on the orders of its leader. If it has, so much the better. | (2) In the event of the village being occupied to gain a footing at some point in it. |
|--|---|

No. 3 Section.—Which, meanwhile, has closed up to the HUTS, sends one pair of EYES to gallop round the left of the village and another pair round the right. EYES to keep close to the village, at say 100 yards distance from it, with the object of drawing fire. Both pairs return, if enemy action permits, by road or roads from rear of village.

H. G. Section—In action at HUTS.

Troop Headquarters—at HUTS.

The tactics are equally sound if No. 3 (Reserve) Section gallops to mound 300 yards E. of village, the actual search of the village being undertaken by No. 1 Section.

2. It may be argued that the action suggested savours too much of a slow, deliberate operation, that more dash is wanted and that No. 1 Section should tackle the village at once, so as to have some information for the Troop leader by the time he arrives.

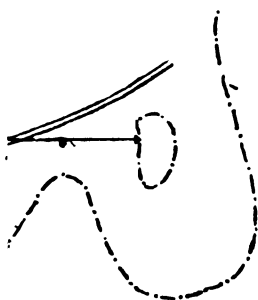
If the village is a small one, or if there is little probability of the presence of enemy in it, then certainly No. 1 Section leader should tackle it at once on his own initiative.

If, as is assumed in this case, the village is a large one and the presence of the enemy is suspected, then nothing will be gained by searching it with too small a force and with insufficient forethought and preparation.

The speed with which the operation can be carried out will be doubled (this is no exaggeration) if the manœuvre is practised half a dozen times as a drill.

LLAGE.

1ST PHASE



EYES halted at end of sound
 from LEADER, assistant and
 rear of section centering up.

1. Troop Sergeant and
 centering up
 and
 ing up

2ND PHASE



10 sec. To deal with any enemy
 retreating from village.
 if village occupied, to gain a
 footing at some point in it.

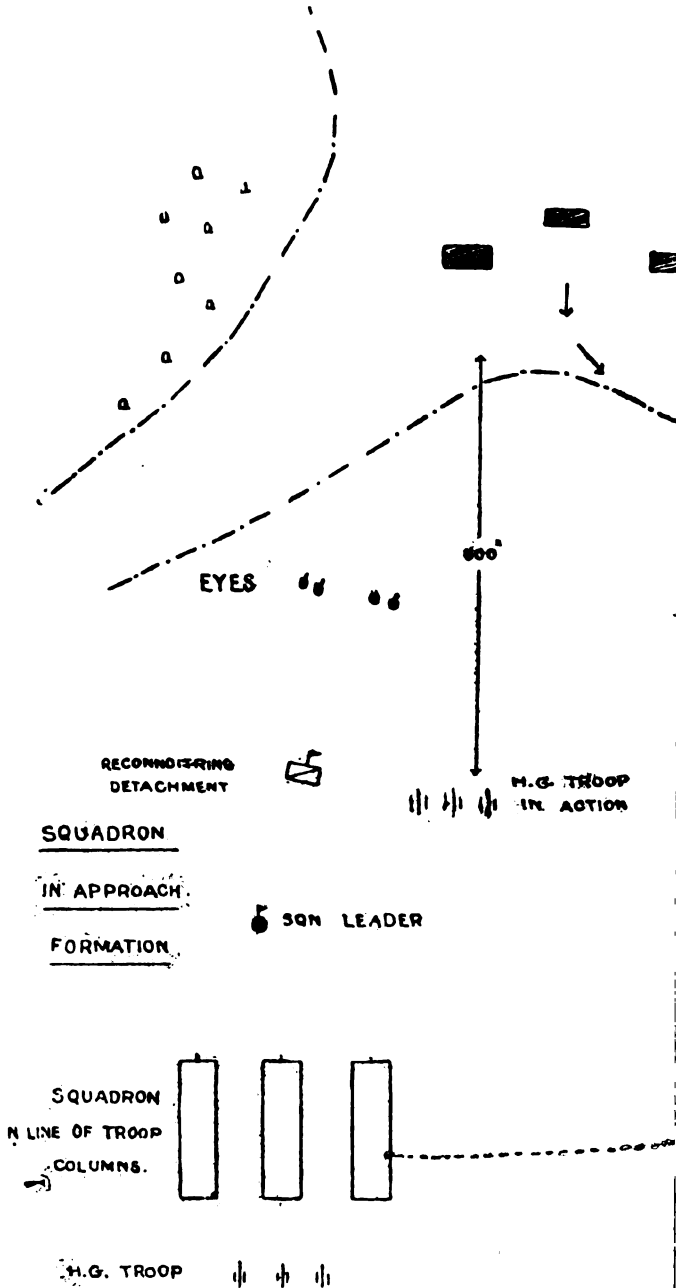


riding a
 a flank.

at position

DIAGRAM IV

MOUNTED ATTACK AGAINST A



NOTES ON DIAGRAM IV.—MOUNTED ATTACK AGAINST A MOUNTED ENEMY.

It seems to be the normal practice for the 3 Sabre Troops of the Squadron to execute the mounted attack against mounted troops in line. In the writer's opinion, this is unsound in ALL circumstances—1 Sabre Troop should always be thrown back in support on the dangerous flank.

Reasons :—

(1) The main role of the support Troop is to meet an unexpected attack from the flank (*e. g.*, by enemy troops hitherto unobserved). Flank Troops of the attacking line have their eyes inevitably glued to the front and cannot be expected to watch the flank as well. Flank scouts may be able to get a flank troop to wheel to meet an unexpected attack, but it is doubtful if they can manage it in time. Moreover, a flank troop which wheels when close to the enemy is likely to upset the cohesion and even the direction of the attacking line.

(2) An enemy troop which, on contact, overlaps and outflanks our attacking line, will probably wheel inwards. The support troop, in this event, is well placed to deal with it, quite as well placed as if it had been in the front line from the outset. On the other hand, with all troops in the front line, there is the possibility of one of our troops overlapping the enemy's line. In this event, the "wide" troop gallops on or, more probably, wheels inwards. It is likely to become temporarily out of control and to be without a target and it does not exert its full influence on the fight at the right moment.

(3) If the attack by the forward troops is successful and the enemy breaks, it is invaluable to have in hand an organised, unbroken Troop to carry out pursuit.

(4) If, on contact, the issue is doubtful, the action of the Support Troop will be decisive. Normally it will charge in on the enemy's flank.

(5) If the attack fails completely, it will be a great help to have one troop which may perhaps be intact and, anyhow, is unlikely to be quite so disorganised as the remainder.

NOTES ON DIAGRAM V.—MOUNTED ATTACK AGAINST
DISMOUNTED ENEMY.

1. As regards interval between horses in the leading waves, Cavalry Training lays down "Widely Extended Order." If there are more than about 3 yards between horses, the troop loses cohesion, men are apt to bunch or scatter too wide and adequate control by the Troop leader becomes very difficult, if not impossible.

2. As regards distance between succeeding lines, Cavalry Training rules that they "should not be at a greater distance than 200 yards."

100 yards is suggested as adequate in most circumstances: sufficient to give the troop time to see and take advantage of what the previous troop has effected and insufficient to give the enemy time to recover from the blow he has just received.

3. The action of the H. G. Troop may vary in each case and cannot be practised as a drill.

When possible the troop should come into action in a position behind which is good rallying ground for the Shock Troops in the event of the attack failing and from which *enfilade* fire can be brought to bear on the hostile Infantry.

As the Hotchkiss Gun is a poor weapon for traversing fire, it is better that the mounted attack should be frontal and the fire attack *enfilade*, than *vice versa*.

MOUNTED . ENEMY



SCOUTS

COMMANDER

● ● ● TROOP IN LINE -
3 yards interval
between horses

● ● ● TROOP IN LINE
3 yards interval
between horses

2ND IN COMMAND
SUPPORT TROOP
in close order

12

12



RESERVE ROAD

NOTES ON DIAGRAM VI.—DISMOUNTED ATTACK.

1. *First Phase.*—Keep as long as possible in formations which facilitate control. Small, shallow columns are the best Dodgers of the enemy fire and wire. Led personally by Troop leaders and preceded by Scouts, such columns can make the best use of cover (nullahs, folds in the ground, etc.). Troop leaders control them without looking to the right, left or rear and without shouting orders.

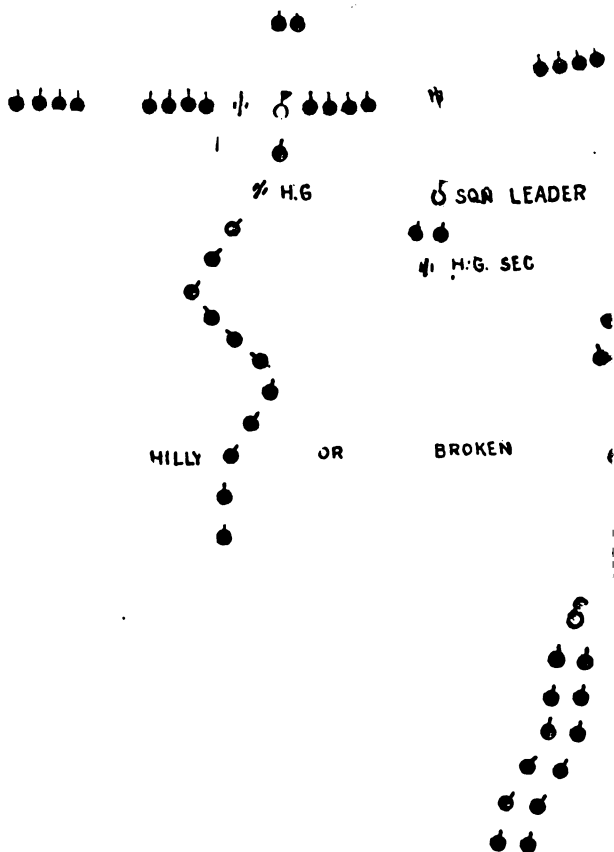
Troop columns need not, in fact should not, advance “in dressing.” The more irregular the general formation of the Squadron, the fewer will be its casualties.

Hotchkiss Guns should be well forward to enable them to “Supplement the fire power of the Troop” from the earliest possible moment. They are not suited or intended for overhead or distant-covering fire.

2. *Second Phase.*—When hostile fire or the nature of the ground renders further advance in SNAKE FORMATION impossible, the Troops deploys. Subsequent action will usually take the form of Section rushes, under the covering-fire of other sections, other Troops and of automatic rifles, right up to the position from which the assault will be launched.

DIS

ENEMY.



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NOTES ON DIAGRAM VII—OCCUPATION OF A TEMPORARY DEFENSIVE POSITION (REAR GUARD).

The principle of rear guard action is to "put all your goods in the shop window" and to show as wide front as possible to the enemy, keeping a reserve in hand when it is practicable to do so. This principle is often taken by subordinate leaders to indicate that the individual men of the Squadron, or at any rate of the troop, should be dotted along the front at 5 to 10 yards interval. In such a malformation fire control by the troop leader is impossible. Men feel isolated and shoot independently and widely.

The following drill is advocated with the sole idea of facilitating fire control by Subordinate leaders.

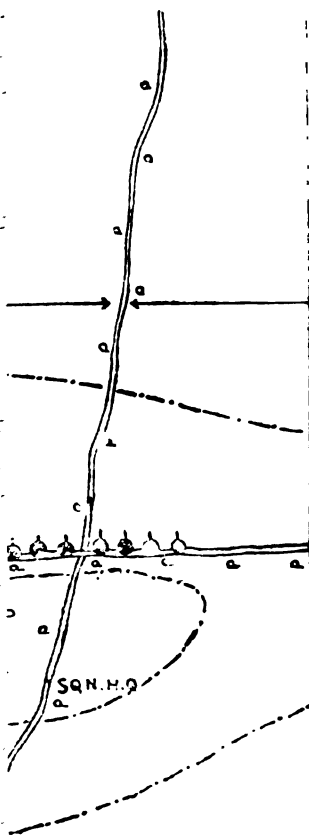
- (a) Sabre Troops are to be allotted areas, 200 to 800 yards apart, as circumstances dictate.
- (b) Troop leaders to allot fire positions to sections with due regard to natural cover. There should be intervals between sections, but each should be within easy shouting distance of the other and the troop leader should be within shouting distance of each section.
- (c) Individuals of sections to be *close* together in their selected fire positions. *Each man to be able to slap his neighbour on the shoulder.*

By no other means is it possible, in the din of the battle, to get an order for cessation of fire, alteration of range or change of target, obeyed at once.

- (d) Hotchkiss Guns must be well forward. Their fire power is equal to 2 sections and is better directed. They are easily concealed. Their useful range is little more than 600 yards, and one cannot afford to waste an inch of this distance by locating them in rear of the rifle position.

DIAGRAM VII

PROBABLE DEFENSIVE



THE WRONG WAY

tended with about 5 yards
men. Impossible for Troop
control, if heavy fire

in rear, limiting its eff
50' in front of rifle position.

IF THIS TROOP WERE KEPT
SERVE, READY TO COUNTER
REINFORCE OR EXTEND
POSITION.

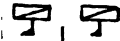
DEFENSIVE POSITIONS



RE

Re

or



NOTES ON DIAGRAM VIII.—WITHDRAWAL FROM A TEMPORARY DEFENSIVE POSITION.

1. The principle of retiring to the new position covered by a force which still remains in the old position is, of course, accepted universally.

The common practice is to leave a complete Troop and some Hotchkiss Guns behind as a covering force. The advantage of this system is that the covering force is under its own responsible Commander, who will give the orders to retire at the correct moment.

Its disadvantage is that, in most cases, one Single Troop, from the position which it occupies at the moment, will not be able to cover the frontage hitherto covered by the whole Squadron. It must therefore cover a narrower frontage or extend its position. The former alternative is undesirable, in that the position is likely to be turned, its partial evacuation having been made obvious to the enemy by the cessation of fire from one flank. The latter alternative wastes time and is difficult to arrange when the Squadron covers a wide frontage and is engaged with the enemy.

The system depicted on the diagram has the advantage that the skeleton Covering Force covers the same frontage as the full Squadron. No re-shuffling is necessary when the main portion of the Squadron retires. Therefore, there is the better chance of the enemy remaining temporarily in ignorance of the withdrawal.

The difficulty is to find a Commander for this piecemeal Force. In Indian Cavalry, the 2nd Squadron Officer is the obvious man. In a British Squadron or Indian Squadron which lacks its full complement of British Officers, the choice rests with the Squadron 2nd-in-Command. He will not have been available in this case to go back to select the new position in rear. A selected Troop leader, probably the leader of the Reserve Troop, will have been sent back instead.

2. In some units it is observed as a rule that retirements should be made at a trot. It is argued that retirements at a gallop may lead to loss of morale and then to "*Sauve Que peut*" flight.

Retirement at a trot entails the evacuation of rear positions earlier than is necessary. On service it results in additional casualties and in actual practice Troops *WON'T* and *DON'T* do it. Therefore, it is an unsound doctrine to teach.

The loss of morale, which is said to result from retirements at a fast pace, can be eliminated, firstly by discipline and, secondly, by habitual training at a gallop in peace time.

SOME REFLECTIONS ON A SEMI-MECHANICAL AGE.

By

COLONEL ON THE STAFF R. J. COLLINS, C.M.G., D.S.O.

It is perhaps not always sufficiently realized how difficult is the present age, in which we soldiers are condemned to live. The introduction of the first mechanically-propelled vehicle—the motor car—was a blessing, at any rate to the Commanders and their Staff Officers, if not to the troops, whom it so often covered with dust or mud. But from the introduction of the London omnibus to France in 1914 our troubles may be said to date. Since then the mechanical side of war has become yearly a more and more complicated problem, and so to-day we find ourselves, willy nilly, held fast in the grip of a semi-mechanical age.

It may be of interest to officers serving in India, who must find it difficult to keep in touch with the various mechanical developments at home, if I attempt to give them a bird's-eye view of the problem and at the same time give them a sketch of the lines upon which trials are proceeding.

I propose to do so purely from the point of view of the General Staff, whose unpleasant duty it will be to try and control in war the partially-mechanicalised army of which we now boast. I propose to approach the subject first by endeavouring to formulate our requirements and then by taking stock of their mechanical fulfilment to date. It is the function of the General Staff to lay down the type of mechanical vehicle required, and then that of the expert designer to approach that ideal as nearly as he can, mechanically. There have naturally been faults on both sides: lack of imagination, a perhaps too strong conservatism and inability to break away from centuries of tradition on the side of the soldier: and on the part of the mechanical expert possibly a tendency to design for designing's sake, rather than a strict adherence to the military essentials of the moment.

2. Mechanical developments during the past decade have been proceeding on two separate though not altogether dissimilar lines. On the one hand there has been evolution of the tank. This may be described as an effort to combine fire and movement, whilst at the same time protecting the firer at any rate from bullets. The motive

power of this mechanical development was of course the appalling costliness of attacks in trench warfare.

On the other lies the efforts being made to improve the mobility of armies, with which is combined a desire to eliminate entirely the horse, that is to pass definitely from the semi to the purely mechanical age.

Progress to date has been far greater in the former than in the latter. The tank may be said already to have reached a definite stage of development, from which further improvement will probably be slow though none the less sure, much on the lines of the aeroplane. It is therefore principally to the latter that I propose to devote attention.

3. The value of mobility in war requires no emphasis. It is the seventh principle in our Field Service Regulations. For the purpose of studying its relationship to mechanical inventions, it is perhaps best considered under two heads, of which I propose to consider here only the former, the latter being perhaps at present more particularly concerned with the tank and its antidotes. These are:—

(a) Mobility for reaching or leaving the battlefield.

(b) Mobility on the battlefield.

Although at present this distinction is, I think, a reasonable one, it cannot be many years now before it will be unnecessary. As the mobility of armies increases the area of the battlefield is obviously going to spread. How complicated the problem of movement to the battlefield has become is best shown by comparing the relative rates at which the various arms move. Roughly speaking, where average good roads are available, matters stand to-day as follows:—

Armoured Cars can average 20 miles per hour.

Tanks can average 10 miles per hour.

Lorries can average 10 miles per hour.

Horses and Cycles can average 5 miles per hour.

Infantry on foot can average $2\frac{1}{2}$ miles per hour.

And since it is admitted that infantry are still the battle winners and essential for success, it follows that the average pace at which a force of all arms can approach the battlefield is still $2\frac{1}{2}$ m. p. h., and the average day's march is limited to 15-25 miles. We have therefore made no real advance in mobility since the days of Alexander. This is a depressing thought and it is no wonder that strenuous efforts are being made to quicken matters up.

4. The Infantryman therefore appears to be the weak link in the chain and it is on increasing his mobility that attention must be concentrated, so that, as he travels faster, so will he be able to cover a greater distance in the day. Let us consider the means available.

Cycles can practically be dismissed at once. Although they would increase the average speed 3 times, they cannot move across country or even be led like horses. They go fast down hill while horses go fast up and they increase enormously the length of a column. In fact they are useful only for intercommunication work on roads. Nearly similar objections may be made to the motor cycle, whose limitations are much the same, though its speed is far greater.

By means of lorries or busses the speed can be quadrupled, while fatigue to those carried is largely eliminated. They proved their use in the Great War. The French even went so far as to put their gun-horses into lorries which also pulled the guns. But there was a drawback. Infantry are not alone: they have essential transport drawn by horses from which it is dangerous to separate them: so in France once again the distance, which infantry even when carried in busses, could cover was limited to the distance the draft-horse could go. Twenty-five miles was about the maximum in a day. Busses therefore by themselves provided no solution.

Efforts therefore were next concentrated on this aspect of the problem. Arrangements were made to carry in lorries the essential horses, while the carts were towed behind. This was possible in the case of all but the "Cookers" which were unsuited for towing, while the heavy draft horses were too big to go sideways in the lorries. The cookers were permanently fixed on lorries and so at times had to be divorced from the troops, with dire results. An infantry brigade thus organised took part in the Manœuvres last September at home. But the hopes of the General Staff that they had solved the problem were doomed to disappointment. The system was clumsy and the mule, always an unknown factor, often upset all time and space calculations by refusing to get into or out of the lorry. It was found, too, that animal lorries could not average more than 5 m. p. h. without serious danger of damage to the animals. Steep hills led to serious trouble, the animals, not being separated from one another as in a horse-box, tending all to lean on the end one who was liable to founder.

Once again it was obvious that the problem had not been solved. The horse remained the bugbear. Hence his death knell was sounded.

“The *horse must be eliminated from such columns.”

5. Before bringing absolutely up to date the study of the means by which increased mobility can be gained, a diversion is advisable to consider two tactical difficulties, for which a mechanical solution must also be found before the problem can be said to be wholly solved.

These are :—

- (a) The problem of protection from ground attack.
- (b) The problem of reconnaissance.

6. Security is the sixth principle of war. All columns require protection, both on the move and at rest. Obviously too, the troops charged with protective duties must be able to move across country as fast or preferably faster than the speed which the column can average on the road.

In France bus columns moved only in rear of an entrenched line. There were no flanks. Attack from the air was the only danger. Protection on the ground was automatic. But in open warfare to-day attack by armoured cars or even tanks will be as likely from the rear as from the front. And men crowded in busses offer a particularly vulnerable target.

What means have we of carrying out such protective duties across country? The answer is only cavalry, which over favourable ground may be able to average 5 m.p.h., while in enclosed country it is doubtful if they will assure protection at over $2\frac{1}{2}$ m.p.h. In their 1925 Manœuvres the French found that a mechanized column was in fact limited in its mobility by the speed with which its cavalry screened advance. We are back therefore where we started, although we have only just decided that the horse must go. And this time a different type of horse is the stumbling block.

7. Though possibly subsidiary in importance to protection, Reconnaissance is essential. All commanders must reconnoitre the ground and enemy dispositions, in advance of their troops and before these are committed to battle. To do so they must be able to move across country and to do so faster than infantry on foot. At present their only means of doing so is the horse. Hence we find even the Tank Corps crying out that they must have horses, while Tractor-drawn artillery are now accompanied by motor-floats carrying the

*Report in Army Manœuvres, Home 1925, page 30.

officers' chargers. Several remarkable examples occurred during last year's Manœuvres showing the helplessness of all arms, tanks included, when by their increased mobility they had temporarily outstripped that modern anachronism, the horse. The riding-horse therefore must also be eliminated.

And with recent developments, such as the dropping of vesicant gas globules from the air, for which protective clothing is the only safeguard, one can't help feeling that he will be well out of it. Let us leave him to his last, but by no means least role, that of sport.

8. We have now got a fairly clear idea of the problem, which incidentally has begun to assume rather alarming proportions, and are in a position to formulate our requirements. On these the mechanical expert can set to work. We appear to want the following:—

- (a) *A mechanical horse*, which should be able to average up to 20 m.p.h. on a road and at least 10 m.p.h. across country: it should be able to jump hedges and, if possible, swim rivers. It should carry two men, the driver being as it were the horseholder, and a good view all round is essential. It should be armed, and armoured if possible.
- (b) *A mechanical transport wagon*, which should be of two types, Light and Heavy, analogous to the present 1st and 2nd line transport. Both should be able to average 10 m.p.h. on a road and say 5 m.p.h. across country. The *Light* type must be able to carry all regimental loads, such as machine-guns, ammunition, food and water: a "cooker" with this capacity is also essential. The *Heavy* type should be up to a 5-ton load, if possible, so as to shorten road space. Loads for this type can be more or less in bulk.
- (c) *A mechanical gun carrier or drawer*, which should have the same mobility as (b): if a carrier, it must be able to pick up or put down its gun mechanically.
- (d) *A mechanical troop-carrier*, which should also have the same mobility as (b): it should be easy of access and exit: it should be protected by bullet-proof armour from attack both from the ground and from the air. It again may have to be of both light and heavy types, the light to carry, say, artillery or machine-gun personnel, the heavy for infantry.

9. To what extent is the mechanical designer to-day able to meet these demands? It must be admitted that he has made great strides. As regards the mechanical horse in fact he has got so far that the elimination of the animal, as an essential in war, both for riding and draft purposes, can be said to be within view. Many of those soldiering to-day will, I believe, see it an accomplished fact.

It was roughly from the aspect I have given you, *viz.*, in search of a substitute for the riding-horse, that Major Martell, while a student at the Staff College in 1921, began his study of the problem. His efforts were first directed towards the possibilities of a cross-country motor-cycle. But the technical difficulties in the motor-cycle proved at most insoluble and the final outcome of years of patient trial and error was the "one-man tank."

I feel that its original conception may for the moment have been obscured, owing, to the interest aroused by it as the possible supplanter of the infantry as well as the riding horse. It has even been referred to as the mechanical light infantry or skirmisher of the future. This may be so, but undoubtedly it is as a mechanical horse, for scouting and reconnaissance duties, that it is most urgently required. It is still only in its infancy and must go through its teething troubles like any other mechanical invention, but it has great possibilities, although it is still a long way off being able to do all that a horse can do. In its present state it is said to be able to average 5 m.p.h. across open country, but to be difficult to steer at over 15 m.p.h. even on a road. It requires a large amount of road space. From the point of view of Eastern conditions it will probably on trial prove to have the following disadvantages:—

- (a) Insufficient clearance.
- (b) Inadequate cooling.
- (c) Lack of overhead cover, which in the hills would be essential.

10. There is an even newer and less advertised development which may prove to be the best substitute for the riding horse in these duties of protection and reconnaissance. This is the wheel-cum-track vehicle, a motor-car which in a few moments can be transformed into a fully tracked vehicle. Whether this can be armoured and to what extent it will be able to stand up to the strain of cross-country work and the weight of armour remains to be seen. But it would appear to have even greater possibilities.

Nevertheless the situation therefore to-day is that nothing under the tank proper can average more than 5 m.p.h. across country. And a tank costs some £ 8,000.

11. So much for the riding horse. What about the future of his brother in the shafts and our friend the mule, with his hundreds of years of gallant war service? The adaptability of the mule to the changing fortunes of war is historical. Still without actually seeing it as I did, it would be hard to believe that the mules of the Mechanicalised Infantry Brigade had learnt to eke out their somewhat slender government ration by snatching mouthfuls from the trees by the roadside as they were trundled along in their lorries.

In this case the problem is easier and progress has been correspondingly greater. There are a variety of types under trial. The principal ones are :—

- (a) The whole track type.
- (b) The half track type.
- (c) The four and six wheel type.

Of these, the first, known popularly as the "Dragon" is very expensive; the second, of which the French Citroen-Kegresse was the first design, is somewhat less so; while the Hathi, a four-wheel drive tractor, which was the first design of the last type, is comparatively cheap. Six-wheel vehicles are already under trial.

A battalion at Aldershot has been recently issued with a number of Type (b) Crossley- Kegresse, in place of their horse-drawn transport. One of this type has recently arrived for test in India.

12. As regards the gun tractor, the four or six-wheel type appears likely to be the best, the gun numbers being carried on the vehicle which draws the gun. The Dragon type of tractor, the design at present in use both for Light and Medium Artillery, has reached an advanced stage in its development and is efficient. But it is expensive, both in initial cost (some £5,000) and in maintenance, the maximum track life being some 2,000 miles. It is unlikely therefore ever to have any commercial use. The gun carrier is not so far advanced, the technical problem involved being more complicated, especially where the off and on loading of the gun is concerned. A carrier of the whole track type has been under trial for some time. Colonel Rowan-Robinson, in his very interesting article entitled "The Future of the Regiment," which appeared in the April 1925 number of the *Journal of the*

Royal Artillery, deals with the disadvantages of this type and its further development appears doubtful for reasons which he so cogently states. On the other hand I believe some consider that the future lies with the self-propelled gun.

It is perhaps unwise and premature to prophesy at this stage but it would appear from the latest trials as if the six-wheel type will prove to be the best for all round use. Its performances have to be seen to be believed. The light six-wheel tractor should prove able to haul light artillery as well as to meet all demands in the shape of first line transport. Whether the heavier type, fitted with powerful winding gear as an additional assistance in heavy or rough going, will be able to do the heavier hauling and transport work is still to be proved, though there is a good prospect of it doing so. Considerable difficulties arise when a rough winding track has to be negotiated, such as must often be met with for example in India. A further and great advantage of this type is that 90% of the original parts of the normal 30-cwt. lorry are used in the construction of the new 30-60 cwt. lorry, which has an additional pair of wheels and a second rear axle. This type will now come on the subsidy list.

An auxiliary band has also recently been invented, which can be rapidly attached to the hind four wheels of the 6 wheeler. When thus fitted a greatly increased load can be carried, with practically all the advantages of the half track type. The changeover occupies a few minutes and the band is quite cheap.

And it would appear as if the mechanical supplanter of the draft-horse will come only just in time, for in a year or two the type of animal will be practically unobtainable.

13. Lastly comes the mechanical troop carrier. The aforementioned London Busses—one of which gallant band took so many years to disintegrate near the mine craters of St. Eloi south of Ypres—were merely the precursors of the more modern char-a-banc, of which there will be an unlimited supply in war. As a result of the new motor taxes these will probably all soon be fitted with giant pneumatic tyres. This will materially lighten the labours of the road engineers in future wars. It is probable too that six-wheel vehicles will gradually supersede the present four wheel type. The protection of the troops thus carried especially from air attack, has hardly yet, I fancy, come under study. Yet it is a pressing need. It requires no very vivid

imagination to picture the very heavy casualties which would be suffered by a bus column, attacked say even by a flight of single-seater scouts. It may be a difficult problem to solve, as the weight entailed in armouring the modern long char-a-banc may well be prohibitive.

14. At the risk of being considered unduly pessimistic as regards the difficulties which lie in the way of our military millenium—complete mechanicalization—and of the pitfalls that await us in the future, I would like to draw attention to two other problems, which require the most serious consideration before we reach our goal. These are :—

(a) The problem of Production and Cost.

(b) The problem of Control.

15. It appears to be generally agreed, and rightly so, that wars of the future are even more likely to be national than those of the past. Judging by the possibilities, as known to-day, of gas attack by aircraft, there may be no need for conscription. Common sense and the instinct for self-preservation may well tend to drive even the most timid into the forefront of the battle !

Be that as it may, it is obvious that the armament and equipment of the Regular Army should be available at short notice for the Territorial Army and extensible within reasonable time to the national army or an expanded Territorial Army, according to the policy of the day. In the Great War this expansion was difficult enough when it entailed no more than the production of rifles, machine-guns, guns and horse drawn-vehicles.

The imagination boggles, however, at the thought of the cost involved, say in maintaining the necessary mechanical vehicles in mobilization store even for the 20 odd divisions envisaged under our present scheme of mobilization and this leaves the Dominions quite out of the picture.

It is obvious, therefore, that every step forward that we take on the road to complete mechanicalization must bring endless trouble in construction, maintenance, repair and replacement, at any rate unless vehicles can be employed which are wholly or partially of a type in use commercially.

On the question of expense alone in fact, it is hardly too much to say that developments in civil mechanicalization must go hand in

hand with, or even precede military progress. One is almost impossible without the other, or at least so expensive as to place it virtually out of court in these penurious days. The subsidy system, therefore, is essential.

Major Martell, as a practical working engineer, has never allowed this aspect of the problem to escape him and his new tank is designed on the most simple and economical lines. Mr. Morris too, in developing Major Martell's design has worked, I believe, always with a view to its introduction on a large scale at home and in the Dominions as a farm tractor.

There is no time to touch upon other ramifications of the problem, but those whose duties force them to compile or even deal with such dreary, though essential, matters as the Central Mechanical Transport Depot catalogue, which already I gather, runs into many volumes, will realise at once what the future holds for them.

There is a vast field of enquiry also before us, into such mundane but essential matters as simplification of design and standardization of working parts, method of holding and distributing spare parts, system of maintenance and repair, not to mention tyre and track life, petrol consumption and road wear. Even in Europe, too, the capacity of bridges to carry the increasing weight is already a nightmare to the Commander of a force which include tanks.

16. And what about the question of control? When we have got all these various new machines of war, shall we be equal to the task of bringing them at their full economic speed into battle and manipulating them when there? When one looks back at the mistakes that were made in 1914, admittedly in retreat and under prolonged strain—but not any the less normal war conditions—the crossing of columns and the resultant chaos that often occurred, it appears legitimate to doubt.

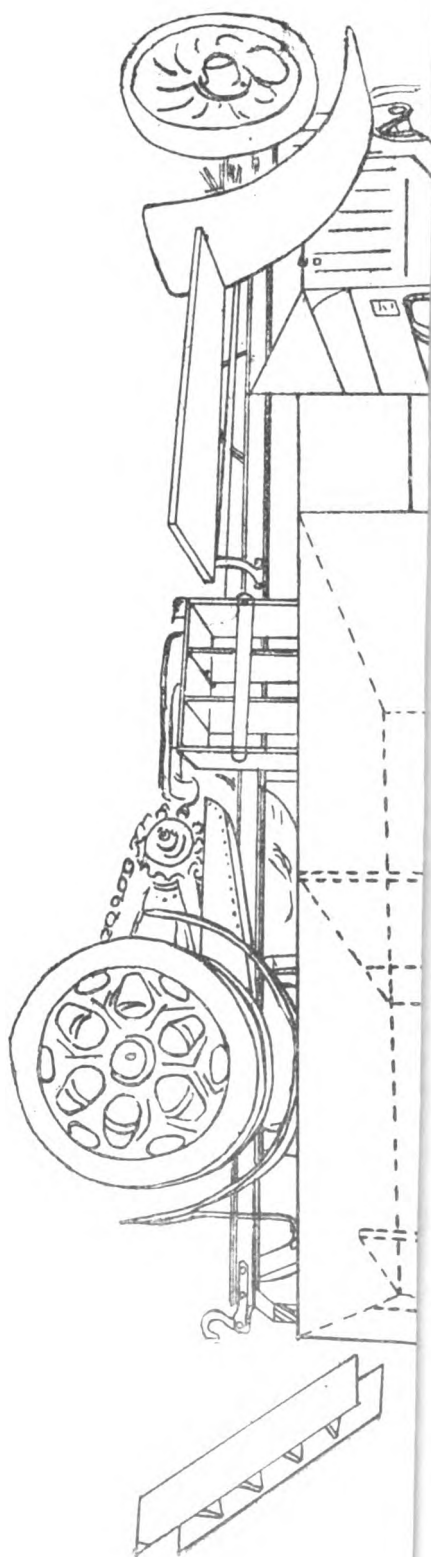
And in those days speed never exceeded $2\frac{1}{2}$ m.p.h., and the Staff were all highly qualified professionals, working in the positions for which they had been earmarked and trained. May we not be letting loose an organization which we may find is beyond our power to control.

I may here be painting the future unduly dark. There are, I know, those who think that matters will be much easier once we are through the partially mechanized stage.

Whatever one may think of this aspect of the problem, no one will deny that, even our present semi-mechanical age will demand an extraordinarily high standard both from the Commanders and Staff. There will be no room for the man who cannot both think and act quickly. And it looks as if we should do well to take a leaf from the book of our friends the sailors. After all--though admittedly it was on the sea where there are no road restrictions--the battle cruiser squadrons at the outset of the Battle of Jutland approached each other at a combined speed of something over 50 m.p.h. It is possible also that inventions in wireless telephony may help us, by keeping pace with our requirements in quick inter-communication.

17. Time does not admit, nor would it probably be anything but rash and unwise at this juncture, to take a peep into the future and to try and foresee what our divisional organization will be say in 10 or 20 or even 50 years time. Fascinating though such conjectures may be, it is best I think left to one gifted with the imagination of an H. G. Wells. The mechanical problems of the day are so pressing and of such infinitely greater importance, at any rate to any one who aspires to the honour of holding worthily a place on the General Staff in the next war, that only continuous hard thinking and study, unremitting work and practice will make us capable of controlling and fighting the organization which we are in process of evolving.

It is in the hope of encouraging such efforts that this article has been written.



A LORRY OFFICE.

By

COLONEL H. ROWAN ROBINSON, C.M.G., D.S.O.

A design is shown herewith of a particularly good type of lorry office. It was designed by Lieut.-Colonel H. de M. Rose, R. A. S. C. and used by him for a great part of the German War.

Two 3-ton lorries converted in similar fashion were used on recent manœuvres as an advanced Divisional Headquarters. The cost of conversion was Rs. 60 per lorry.

The four compartments were allotted as follows :—

No. 1. G. O. C., G. S. O. 1, G. S. O. 2

No. 2. G.S.O. 3 and R.A.F. Liaison officer.

No. 3. Cipher officer.

No. 4. Clerks.

The design is the outcome of long experience. If copied, the dimensions should be closely followed, as they afford the maximum of convenience possible. Barrack stools furnish the most convenient type of seat. They can be easily stowed away under the tables.

The lorries provide obvious targets for aeroplanes and should, therefore, be under cover of trees or carefully camouflaged.

The value of mobile offices for the study of maps and rapid issue of orders is very great ; and it would undoubtedly effect a great improvement in the efficiency of a force, were each Division to be allowed for this purpose an Establishment of two large halftrack lorries and each Brigade were allowed one such lorry.

1914-1915 IN EAST AFRICA.

By

COLONEL G. M. ORR, C.B.E., D.S.O.

It is proposed, after suggesting some reasons for a fuller knowledge of the war in East Africa, to give a short description of the theatre of war, to enumerate the armed forces at the outbreak and the measures taken to increase and maintain them, to outline the military objects of the opposing belligerents, and describe briefly the course of operations during 1914 and 1915. It will therefore only cover the period prior to the invasion of German East Africa by the forces organised for the purpose under the command of Generals Smuts and Northey, and by the Belgians, which commenced in 1916 and with which the public is to some extent familiar. Apart from the knowledge which the writer acquired in over three years of continuous service in the eastern half of East Africa from October 1914 to December 1917, he has had recourse to the following publications:—"My Reminiscences of East Africa" (General Von Lettow-Vorbeck), "The Empire at War," Vol. 4, Africa (Sir Charles Lucas), "L' Afrique orientale allemande et la guerre 1914-1918" (Commandant Bührer.)

I.—Some Reasons for a Fuller Knowledge of the War in East Africa.

It is understood that for some time to come it will not be possible for the Historical section of the Committee of Imperial Defence to commence an official history of the war in East Africa. It is true that the operations took place in a distant and subsidiary theatre of the Great War and had no effect on the progress of the war itself. Nevertheless, the war provides lessons which are of undoubted importance. We still have colonies in Africa whose frontiers march with those of great European Powers. It is surely necessary that our colonies should not be placed again in the invidious position which was the lot of the East and Central African colonies in 1914. It is equally important that both civilians and the members of our armed forces on land, sea and in the air, should know the facts of, and deduce the lessons from, the first war which has been carried out in a tropical climate over a vast and diversified terrain by large forces using every modern contrivance; a war in which armaments were similar on both sides, in which organisations were on modern principles, and in which a large number of white troops were for a time employed.

2. *The Theatre of War.*

There is probably no theatre of war which demands more careful study of its topography before a proper appreciation can be gained of the problems forced on the belligerents. Space will not permit more than a reference to its varied terrain and its climatic conditions. The reader must study the map closely ; realise the size of the country and its sparse communications ; note the relationship of each of our colonies, of the Belgian Congo, and of Portuguese East Africa to the different portions of the German colony with whose frontier they marched. Special note should be given to the position of the island of Zanzibar, opposite the German harbour of Dar-es-Salaam, and to that of the German island of Mafia, opposite the delta of the Rufiji, in which the German cruiser *Konigsberg* was soon to take refuge. German East Africa itself was nearly twice the size of Germany in Europe. It had an eastern seaboard of about 500 miles. To the north it had some 600 miles of land frontier and 400 miles of the coast of Lake Victoria. Westward there was 700 miles of lake edge and 200 miles of land frontier. To the south was about 450 miles of land frontier most of which followed the Rovuma river. From a low coastal region on the east, varying in breadth from 50 to 100 miles, the surface of the country may be described as rising to a large inland plateau 3,000' to 5,000'* high whose western edge was marked by the fissure formed by the lakes Kivu and Tanganyika, the surfaces of which were about 2,600' above sea level.

A little to the east of a central longitudinal line the structure of the ground showed the effect of the one time subsidence of the earth's crust in the depression forming the lakes Natron and Manyara in the north, and lake Nyasa in the south. This depression, which is less marked between Lake Manyara and Lake Nyasa, is the southern portion of what is known as the Great Rift Valley. The eastern half of the colony is divided into two nearly equally north and south portions by the course of the Ruaha river, and the lower Rufiji river, of which it is the main tributary. In the northern portion lies the Masai Steppe ; on its north-eastern edge the Kilimanjaro massif and the Pare and Usambara hills. South of the Ruaha lies a diversified and hilly region between the numerous tributaries of the Ruaha and Rufiji, stretching on southwards across a sparsely habited and inhospitable

* Rising to over 7,000' in Ruanda, West of Lake Manyara, between Iringa and Lake Nyasa, and N. of Bismarckburg.

country with isolated hills as far as the hot and unhealthy basin of the Rovuma river. This area south of the Ruaha is bounded to the west by the rising plateau, and hills forming the watershed between the the Indian Ocean and the Lakes and Congo basin. It is marked by the line of the Uchungwe Mountains, over 6,000' high stretching from Iringa south-westwards to the Livingstone Range on the north-east of Lake Nyasa. The western half of German East Africa has as its most marked features, the varied mountainous and undulating pasture lands in the north-west, the central Unyamwezi plateau round Tabora, and the low dip forming the lake of Rukwa between the southern edges of the plateau and the line of hills edging Lake Tanganyika. All this western half, particularly in its north and north-west portions is more populated and productive than the eastern half with the exception perhaps of the block between Iringa and the north end of Lake Nyasa. The climate is, generally, very unhealthy, except in the hilly tracts of the north and north-east and round Iringa; even the natives of the country suffer when moved from their own area to another. The south-west monsoon, blowing from April to June, gives the heaviest rains on the coast side, while another rainy season sets in from September to November. The Lake as well as the sea coastal regions are hot and steamy. In the interior, where temperatures can vary from frost at night to well above 100° in the shade by day, there is really only one rainy season, from October to April, when movement becomes practically impossible.

The map shows the numerous rivers of the country; few of them are perennial. Only those which had to do with operations are named. Similarly only those place names are shown on the map which assumed some form or other of importance during the operations. No routes in the country were capable of taking vehicular traffic without some form of improvement, either by broadening or by bridging river-courses or by grading. In no case was metalling resorted to. Everywhere the soil was for one reason or another of a nature which cut up badly in dry weather and quickly became boggy, and impassable for stretches, after rain. The German Northern and Central railways were of metre gauge, similar to the Uganda Railway in B. E. A. and to several Indian railways, from which engines and some stock were imported. The map shows which railways, and their gauge, were opened during the war. Cart or motor transport did not come into use until 1916.

The transport of the country was "carrier." A carrier's load was between 50 and 60 lbs. An instructive example of the number of carriers required to maintain a small force 450 miles from a railhead is given in "The Empire at War." It was found in N. Rhodesia that 16,500 carriers would be required to deliver 1 ton a day, *i. e.*, sufficient for 1,000 troops and followers, at the main depot 450 miles from railhead. Of these 2,500 only would be for the supply of the troops and 14,000 for the carriage of food for the carriers.

It is necessary to look more closely at the country adjoining the frontiers. From the mouth of the Umba river to Lake Natron, a distance of about 300 miles, there was on the B. E. A. side a strip of country running back to the Uganda Railway, with an average depth of 50 miles. This strip was practically desert, waterless, and bush covered. It was crossed by four routes practical for the passage of perhaps a few hundred men. They were:—

- (a) the coast route from Tanga through Jassin to the south edge of Kilindini harbour which was the deep-water harbour of Mombassa,
- (b) the caravan route through New Moshi at the head of the Northern Railway, and Taveta, to Voi on the Uganda Railway,
- (c) another route from near Taveta to Tsavo bridge on the Uganda Railway, and
- (d) a route from the west of Kilimanjaro past Longido mountain and Kajiado, on the Magadi branch line, to Nairobi. On the German side lay the ranges of the Usambara, south and north Pare hills and Kilimanjaro itself, forming a rampart for the protection of the German Northern Railway. Assuming that a force could reach the eastern side of the range there are four gaps through it leading to the Northern Railway, the southern one *via* Gonya on Buiko, further north *via* Same, and in addition to the gap by which the main route from Taveta passes to Moshi, there is a track from Taveta over Reata-Nek to the Pangani river. Between Lake Natron and Lake Victoria the frontier crosses a high upland pasturage inhabited by the Masai tribe, whom it was to the advantage of both sides to propitiate, rather than to irritate by moving troops across it. Between the uplands

and the lake edge was however a strip some 50 miles broad through which ran the track between Kisumu and Mwanza passing on its way Kisii and the lake ports of Karunga (Br.) and Shirati (Gr.). So long as the lake end of the Uganda Railway was protected from raids up the east shore of the Lake, there need be little fear for the remainder as it wound its way from Nairobi across the Rift Valley and over the high plateau to the west, keeping as it did a hundred miles from the frontier. The frontier across the Lake was an imaginary line east and west across the centre. But whoever held command of the waters of the Lake at once had the power to push their frontier in the form of a broad salient into the opposing country. If in German hands, it would mean the power to sever British East Africa from Uganda and from communication with the Belgian Congo. In the British hands it meant the power to reach the Central Railway at Tabora, a distance of 200 miles, to which two good routes ran from Mwanza, through fertile country, and to place German forces to the west and north west between two fires. From the Lake westwards the frontier for 100 miles may be said to be the Kagera river—a distinct military obstacle, after which the country as far as Lake Kivu was mountainous and difficult though traversed by a good route from Uganda to Kisenyi.

The Belgian frontier from the north of Lake Kivu to the south end of Lake Tanganyika may be considered in two sections. The smaller and northern section through Lake Kivu and along the Russisi river to Lake Tanganyika lay in a narrow rift between high mountains most difficult to force except with much superior numbers. Whoever held command of the waters of Lake Kivu had the power to prevent the opposing side from using the lateral communication provided by the lake-edge tracks. If the Germans were in a position to provide strong forces to invade Belgian territory, a geographical objective could be found in the navigable Congo, and Stanleyville, some 300 miles distant. On the other hand the retention of the comparatively rich districts of Ruanda and Urundi to the east as long as possible was as important to the Germans as their seizure would be of value to the Belgians. The southern section consisted of the length of Lake Tanganyika. Power to land on the opposing shore lay with whoever

had command of its waters. From the German shore routes led inland to the Tabora area from Usumbura, Ujiji, Karema and Bismarckburg, and the Central Railway had its railhead at Kigoma a few miles from Ujiji. From the Belgian shore the only route westward was that by which the railway from Kabalo on the Congo was approaching the proposed harbour of Albertville, a distance of over 150 miles.

The North Rhodesia frontier lay along high ground for some 150 miles until it joined the Nyasa frontier at the head of the Songwe river which the Nyasa frontier followed to its exit in the N. W. corner of the Lake. A good lateral road ran along each side of the frontier. That on the British side being from Kituta on the southern shore of Lake Tanganyika, through Abercorn and Fife in N. Rhodesia, and in Nyasaland through Fort Hill to Karonga on Lake Nyasa. That on the German side ran from Bismarckburg to New Langenburg and Mwaya, a port on Lake Nyasa. Routes inland ran from Bismarckburg *via* the north of Lake Rukwa towards Tabora and from New Langenburg towards Iringa across the mountain range. In N. Rhodesia several routes converged from the frontier southwards on to Kasama and thence on to the railway distant 450 miles. But to reach the Katanga copper district it would be necessary to pass westward across the Luapula river, south of Lake Mweru, fully 500 miles. As on the other lakes, the power to land on either shore of Lake Nyasa rested with the side that had command of the waters. So long as the neutrality of Portugal was observed, the Portuguese territory to the east of the Lake was a buffer to attack on Nyasaland from that side. This held good for a year.

3. *The armed forces at the outbreak and up to end 1915.*

(a) **Allies.**

British East Africa had a population of about 3,000 male Europeans, 12,000 Asiatics, and three million natives. The regular troops consisted of the third battalion Kings African Rifles (H. Q. Nairobi). There was an armed police force of about 50 Europeans and 1,500 natives. Some defence forces were formed at Mombassa, Nairobi and Kisumu, and two European volunteer units were raised—the East African Mounted Rifles and the East African Regiment, but the latter died a natural death as soon as troops from India began coming into the country in October and November 1914. A useful corps of

Arab Rifles was raised on the coast and rendered good service until the summer of 1916. Carriers to the number of 7,500 were enrolled, but it was not until 1916 and 1917 that a systematic reigistration, recruitment and organisation of carriers was undertaken, which produced in the end 200,000.

In Uganda there was but a handful of Europeans, some 4,000 Asiatics and three million natives. The fourth battalion Kings African Rifles (H. Q. Entebbe) had 7 companies, 2 of which were already on the B. E. A. side of the Lake, 3 were in the north and the remaining 2 were sent to Kisumu. Europeans to the number of 200, and about 100 Indians, went into training. Nuclei of defence forces were formed in the vicinity of the German frontier, and useful battalions, 500 strong, were organised from the armed-police and from the Baganda tribe who had already provided some 3,000 spearmen for patrol work. Uganda was particularly well equipped with medical staff and was able to provide several medical units, both white and coloured. Very early, 6,000 carriers were organised for the southern frontier, and several thousand were sent to B. E. A. 120,000 carriers were provided to keep open the communications with the Belgian Congo. Altogether the numbers provided in the war rose to 178,000.

At the outbreak of the war Zanzibar had as garrison one company (100 men) of the third K. A. R. A Town-guard was formed from the comparatively small European population. This force was later augmented by the civil native police and in 1915 formed a Volunteer Defence Force. A naval detachment from the "Pagasus" also became available after that ship had been sunk on 20th September 1914. A medical unit, 200 strong, and a carrier corps of 2,000 were sent to join the Indian Expeditionary Force for the landing at Tanga in November 1914. As soon as the British Navy in E. A. waters was reinforced to carry out a blockade of the German coast, Zanzibar became an important depot.

The first units to arrive from India were the 29th Punjabis in September, followed in October by two composite battalions of Imperial service troops; *the 27th Indian Mt. Infantry, the Calcutta volunteer 12-pr. battery which received ox draught after arrival, and a railway volunteer maxim-gun detachment. The Indian Expeditionary Force which landed in November after the Tanga reverse

* i. e., half battalions of Jhind and Kapurthala infantry and Rampur and Bharatpur infantry.

consisted of a battalion of British Infantry, 4 Indian Infantry battalions, 2 composite Imperial Service battalions, * an Indian Pioneer battalion, and an Imperial Service Sappers and Miners company and an Indian pack battery.† There was also a ship-load of railway material and two Indian railway companies. This force had some first-line mule transport but was to be equipped with additional "carrier" transport for all other purposes on arrival. Early in 1915 the 130th Baluchis and a squadron of 17th Cavalry were added, to be followed in the autumn by 17th Infantry, 40th Pathans, 129th Baluchis. In March 1915 a battalion of Rhodesian Rifles joined the force, followed in May by a New Army battalion from England (25th Battalion Royal Fusiliers) which did its training after arrival.

Meanwhile a certain amount of mule and ox transport had been organised and equipped with Indian transport carts. This transport was increased in the autumn of 1915 to meet the requirements of the larger expeditionary force which was to carry out the invasion of German East Africa in 1916, the story of which does not properly belong to this article.

Northern Rhodesia, which had 150 miles of frontier towards German S. W. Africa, 800 miles away from its 150 miles of frontier with German East, had a population of 2,300 Europeans and 830,000 natives. The only defence force was the Northern Rhodesia Police (N. R. P.), with a strength of 31 Europeans and 768 natives, of which 2 Europeans and 127 natives were on or near the German East frontier. A small mobile column of the N. R. P. were sent from Livingstone to Kasama (400 miles by rail and 450 by road) and a European Volunteer Corps (Northern Rhodesia Rifles), was formed. As the weakness of the northern border was considered a grave danger not only to Rhodesia but to the Belgian copper mine district of Katanga, 500 Belgian troops with two field-guns were sent to Abercorn at the end of September. By October 1915 the latter were withdrawn and their place taken by two European companies totalling 250 men, drawn from the British South African Police, and the South Rhodesian Volunteers. The sparse population, and the tremendous length and difficulties of the line of communications up to the frontier, to say nothing of the needs of the line of communications which would eventually have to be

* Imperial service troops were contingents equipped and maintained by certain Indian States. They had 2 or 3 British officers attached in an advisory capacity.

† For units see composition of Expeditionary Force at Tanga.

opened in German East Africa, entailed an elaborate organisation. It was 680 miles from railhead to frontier posts. In 1915 a route was established from a railhead on the Belgian frontier, partly by road and partly by water. Seventy miles of carrier transport was followed by 400 miles of canoe transport, to be followed by another 30 miles of road before the main base at Kasama was reached. This alone required over 6,000 carriers and 12,000 paddlers. Eventually there were 37,000 natives of Northern Rhodesia employed in war work.

In Nyasaland there were only about 500 male Europeans, 300 Asiatics and 1½ million natives. The military forces consisted of the 1st Battalion King's African Rifles (H. Q. Zomba at the south end of Lake Nyasa) with a strength of 600 including reservists. There was an untrained European Volunteer reserve of 200 whites, of whom 50 went with 1st K. A. R. to the north end of the Lake. On the Lake were two armed ships, the "Gwendolen" of 350 tons with a 3-pr. Hotchkiss and a Nordenfeldt, and the "Pioneer" of 40 tons with a Nordenfeldt. Here again the supply services and transport required an immense effort. By 1916 there were 72,000 carriers in employment—a number increased to 123,000 in 1916.

The territory of the Belgian Congo—four times the size of Germany in Europe—had a military force of 18,000 natives rising to 23,000 on mobilization. Not more than 1,500 were, however, on or near their eastern frontiers. It was not till 1915 that one of the two brigades organised by General Tombeur for the eventual invasion of German East was in a position to counter the German attack on the Lake Kivu area. In order to complete the organisation and maintenance of their forces the Belgians had to have recourse to a line of communications through S. W. Uganda for which Uganda supplied the carrier transport already mentioned. The Belgian armament on Lake Tanganyika was negligible and the Germans at once obtained mastery of its waters, not to be ousted until 26th December 1915 by the British Naval Expeditionary force of two gun-boats.

(b) **German.**

The German East African forces consisted of 14 companies of natives and a training depot. Of these 4 were along the Central Railway, at Dar-es-Salaam, Kilimatinde, Tabora and at Ujiji on Lake Tanganyika; north of the railway on the route from Kilimantinde to Taveta on the British East African Frontier were two companies,

at Kondoa-Irangi and Arusha; on the shores of Lake Victoria were two companies, one at Mwanza on the south shore, the other at Bukoba on the west near the Uganda frontier; facing the Belgian Congo were two companies, at Kisenyi on Lake Kivu, and at Usumbura at the north end of Lake Tanganyika; south of the Central Railway were two companies, at Mahenge and Iringa: facing the Nyasa border at the north end of Lake Nyasa was one company at New Langenberg; and there was one company on the coast at Lindi. According to Von Lettow the force aggregated 216 Europeans and 2,540 natives. The peace strength of the companies averaged about 10 Europeans and 160 natives with two machine-guns. Only three companies had modern rifles, the remainder being armed with the old 1871 pattern rifle, using smoky powder. There was a miscellaneous collection of 50 light field guns. In addition there was an armed police force of 45 Europeans and 2,154 natives. Von Lettow says that of the 3,000 Europeans who were enrolled in the protective forces in the war, the majority came from the districts along the Northern Railway where volunteer rifle corps existed, but their armament was a varied type of sporting rifle. There were wireless installations at Dar-es-Salaam, Mwanza and Bukoba. On the coast were the fast cruiser "Konigsberg" and the gun-boat "Moewe." On the various lakes were small vessels, which however did not receive any armament till the outbreak of war.

As soon as General Von Lettow Vorbeck landed in January 1914 to take over the command of the Protective force he made a tour of inspection. He says that although he did not suspect the nature of the task which was to confront him in a few months' time, he was already obliged to consider what the task might be, since, during the past ten years' universal war had more than once seemed imminent. He at once took steps to arm three more companies with modern rifles, and to improve the organization and armament of the rifle force. He recognised the lack of opportunity which the scattered companies and the senior officers had of training in larger formations, but he instilled into all the importance of a more thorough training with the machine-gun. He took steps to counteract the tendency for the police force, which was under the civil authorities, to increase to the detriment of the Protective force and to ensure that it should instead, become a useful adjunct in war. In short he began measures to improve the military efficiency of the armed forces and to organize

the colony to meet war if and when it came. He had also given thought to the way he would employ his forces. His intentions and how he endeavoured to carry them out, will be dealt with when studying the military problem of the opposing sides.

4.—*The military problem.*

Before dealing with the military problem of the Allies, it is necessary to explain briefly the conditions under which each of the British Colonies maintained and administered its armed forces. The armed forces were, and still are, organised and administered by the Colonial Office. Their strength in each colony was based on the needs of that colony for the maintenance of its internal security with no thought of aggression from across a frontier. The advice of the Chief of the Imperial General Staff, on whom rests the responsibility of giving advice in matters affecting the security of the Empire was not sought directly by the Colonial Office. The responsibility for preparation to meet war, therefore, was in the hands of a department whose officers are by the nature of things untrained to think in terms of war or of the measures necessary for the preparation of war. In each colony the Governor was Commander-in-Chief. (Northern Rhodesia had an Administrator of the British South African Company). The senior military officer was the senior local regimental officer, who, although carrying the local rank of Lieut.-Colonel, was at most a major by army rank. It would be unlikely that he would have had either training or experience in command to give advice on measures to meet a war other than against ill-armed tribes. There was a more senior officer appointed as Inspector-General of the King's African Rifles. His headquarters were at the Colonial Office, but he paid periodic visits to the Colonies. There is nothing to show that his advice was sought, or likely to be sought, on anything but recruitment, regimental administration, and the standard of training to meet local conditions. The Colonial administration was therefore ill-equipped to evolve military plans or put together a war machine. When we remember the scarcity of armed forces in each colony and the entire lack of any foreseen organization for local defence forces, white or coloured, there was no option on the outbreak of war but for the Colonial Office to tell each colony to do what it could to preserve the integrity of its frontier, and that perhaps later on means would be formed to send reinforcements. There was no suggestion

of co-ordinating any plan between the colonies. Each colony therefore took stock of what it had, proclaimed some form of Martial Law and called on their Colonists to form local defence forces. Each colony looked to its own section of frontier which marched with that of the enemy ; and with the valour of ignorance hoped for the best. Uganda felt that everything depended on the inviolability of the Uganda Railway which, however, lay entirely within the colony of British East Africa. British East Africa thought chiefly of Mombasa and Nairobi—Mombasa because it was the only link with the Empire overseas ; Nairobi because it was the seat of Government and of the Uganda Railway, which for 250 miles ran at an average distance of 50 miles from the German frontier. Thus the anxiety for the Uganda Railway being common to Uganda and British East Africa brought about the co-operation of those two colonies for its protection. N. Rhodesia and Nyasaland, both of which fell far behind either Uganda or British East Africa in the strength of their armed forces, actual and potential, and whose communications were both long and difficult, felt their isolation and their distance from sources of reinforcement.

(a) *Allies.*

If we turn now to the military problem before the various colonies, we find the same scarcity of troops in each with which to act. It required no weighing of alternatives to decide that only measures for the defence of what was most vital could be resorted to. Even the most limited measures for defence must include provision for finding out what the enemy was doing, though the fewness of troops precluded any form of reconnaissance in force. Military patrols on and towards the frontiers were the only means to this end at first, but the immediate formation of an intelligence service making use of the people of the country was essential. On the lakes there was only one way in which unfettered movement could be obtained and that was by driving any enemy off their waters, establishing supremacy at the earliest possible moment and keeping it. Not less important than obtaining information was to prevent the enemy getting information, by a strict application of Martial Law and restriction of movement particularly in such places as Mombasa and Zanzibar. It may be said at once that although a measure of Martial Law was proclaimed in each colony it was fully a year before adequate measures were established to restrict movement in or out of either of those places.

To Uganda as well as to British East Africa the safety of the Uganda Railway was a primary consideration. Though it ran entirely within B. E. A., Uganda placed the available companies of 4th Battalion of the K. A. R. for that purpose. It must be remembered that the Turkhana tribe in the Lake Rudolf area to the extreme north were in open hostility at the time and a joint expedition from Uganda and B. E. A. was about to take place, Uganda having already sent three companies out of seven of the 4th K. A. R. to the north for that purpose. The O. C., 4th K. A. R., being the senior officer in the 4th and 3rd K. A. R., took over command of the armed forces of both colonies with headquarters at Nairobi. A force aggregating 1,000 rifles was little enough to defend over 400 miles of vital communication! Mombasa was undoubtedly the most vulnerable point. It was the one link with overseas. It was entirely undefended, and open to attack from seaward, since no British warship in those waters could match the German cruiser *Konigsberg* in speed or armament. The landward approach by the coast route from Jassin was only 50 miles and the most practicable of all the routes for the advance of an enemy force. The destruction of the railway bridge from Mombasa island to the mainland would have had far-reaching results. The other vulnerable points, by reason of the lines of approach to them, were Voi, Tsavo, and Kisumu and to a less extent Nairobi. While the close defence of those points could be left to local defence forces, however little trained, it was necessary to have mobile regular troops in position to meet incursions in force against them, and to support patrols pushed out on the lines in advance. Only in the eastern section was it possible to concentrate a central reserve for this purpose. With such a reserve at Voi suitable detachments could watch the approaches from the frontier on to Mombasa, Voi, Tsavo and Nairobi. On the eastern shore of Lake Victoria the force would have to be sufficient to deal, without reinforcement, with any situation that might arise. As soon as the Volunteer Mounted Rifles could be organised, their appropriate area would be in the fly-free districts towards Longido Mountain, based on Kajiado on the Magadi branch railway, releasing any King's African Rifles for use in the more enclosed country further east. Similarly, the Arab Rifles would be a most useful adjunct on the coast route. On the Lake the small fleet of Lake steamers, superior in size and speed to the two known German boats should be able to clear those waters. To the west of the Lake, which for the time being would have to be

considered an area of secondary importance, the local tribesmen with a backing of armed police would be enough to deal with the very small forces that the enemy were likely to have in that direction. The Belgians had little to fear on their small stretches of land frontier but had no means of preventing the Germans from establishing complete supremacy on both lakes Kivu and Tanganyika. The problem on the Rhodesian frontier was to put on as bold a face as possible and, by vigorous patrolling, prevent the enemy from discovering the extreme weakness of the defence,—only 120 armed police and a few settlers—until a mobile column from headquarters at Livingstone, distant 350 miles by rail and 600 miles by road, could reach the frontier and give the patrols some support. Unfortunately, telegraphic communication was by a line that ran along the northern border and thence through Nyasaland. To take the place of such a precarious line, a new line was begun at once from Abercorn *via* Kasama to the railway. It would not do to let the Germans get a foothold in the northern district, which, added to their command of Lake Tanganyika, would give them a base from which to plan an invasion of the rich copper district of Katanga a few hundred miles to the west. Consideration of this problem from the German point of view should, however, have been sufficient to discredit such an intention. It would have meant the concentration of a force far stronger than the Germans could possibly assemble, and at the same time guard vital areas of their colony elsewhere. Nevertheless, the fear was sufficient to cause the Belgians to send 500 men to reinforce the police at Abercorn. In Nyasaland the problem was to obtain the mastery of the Lake and so have a quick and easy means of communication from railhead at Blantyre and the southern end of the Lake to the northern frontier. This essential was grasped at once and acted on with success, so that, by about the 22nd August the available strength of the 1st K. A. R., about 500, reached Karonga in time to find the enemy in some strength already within Nyasaland border, and to drive them out.

(b) **German.**

It has been shown that the Commander of the German Protective force had landed imbued with the idea that a universal war was bound to come, and that the colony to which he had been sent must be prepared to play an effective part.

Von Lettow—a Prussian—had received the highest form of military training. He had made a special study of Germany's colonies

as well as of foreign ones. He had been in China during the Boxer troubles and had made the acquaintance, officially and socially, of the various international contingents, particularly of the English. He had served with Boers, and on the staff of General Botha. He had had experience of "bush" warfare in German S. W. Africa. He says himself that his training had rendered him capable of accommodating himself rapidly to new conditions. In character he was sagacious and strong-minded. The steps he had taken to improve the Protective force have already been mentioned. As for the part that the colony could play,—he recognised that it could only form a subsidiary theatre of war and that its fate would be decided on the battlefields of Europe, but a colony nevertheless had a duty, which was to influence in every way possible the decision. He put himself in the position of the commander of a detachment whose object it was to contain superior forces and prevent them from being present at the decisive battle. He tells us he set himself the question (this was before the war) whether he could not, in spite of the weakness of his force, prevent considerable numbers of the enemy from intervening in Europe or on other secondary but important theatres, or anyhow whether he could not inflict loss of personnel or war material worth mentioning. He answered the question in the affirmative. His training told him that the best protection was to threaten the enemy in his own country. He says "In examining the question where to find a point so vital to the enemy as to afford us the prospect of a successful attack, or, at any rate, of a threat of such an attack, one thought at once of the frontier between German and British East Africa. Parallel with it, at a distance of a few marches, runs the main artery of the British territory, the Uganda Railway, an object which, with a length of quite 440 miles, was extremely difficult for the enemy to protect, and would, therefore, if effectively threatened, require a large part of his troops for the purpose." In his examination he must have considered and rejected the idea of threatening the vital artery of the Belgian Congo—namely, the Congo itself, either west of Lake Kivu, or at Kabalo, between which and the west shore of Lake Tanganyika and almost opposite the German railhead ran a railway for the greater part of the way; or a threat to the valuable Katanga copper district further south. Apart from the much greater distance of his objective from his own bases, any adventure west of Lake Tanganyika would lay his own main artery open to danger from

a flank. It was to the northern frontier and flank that he would particularly look. He was probably sufficiently informed of the lack of preparedness for war in the allied colonies to feel that he could take the initiative at the beginning. But he would have to weigh the possibility of the colonies being reinforced from outside and that he in turn would be threatened with attack. Attack might take the form of a descent on the coast with the terminus of either the Northern Railway (Tanga) or of the Central Railway (Dar-es-Salaam) as the objective for a base for further advances inland; or of an advance from the frontier of British East Africa itself, possibly in combination with a descent on the coast, in which case the Northern Railway between Kilimanjaro and Tanga, with the rich district of Kilimanjaro and Usambara, would be the natural objective and stepping-stone for an advance southwards on to his main artery, the Central Railway; or with the seizure of Mwanza on the southern shore of Lake Victoria an advance on to the Central Railway would be a possibility, a course which would cut off the valuable N. W. from the rest of the colony, and, anyhow, make possible an effective co-operation with the Belgians. In all these cases the Uganda Railway would be vital to the allies. Hence his desire to threaten as soon as possible such a sensitive point in the allied armour. He had unfolded his plan before the war to the Governor, Schnee, and advocated a concentration of all available companies on to the Northern Railway, with the immediate seizure on the outbreak of a war of the British village of Taveta, the possession of which would ensure his exit from the gap between Kilimanjaro and the North Pare hills. But the Governor would not have it. It was no part of Lettow's plan that the German forces should remain split up in small detachments for local defence, but, as he says, "Keep them together, grip the enemy by the throat and force him to employ his forces for self-defence." Lettow in his book does not give the Governor's reasons, and it is difficult to think what they could be. Many Germans in East Africa believed that by the Treaty of Berlin, colonies of Powers at war would be regarded as neutral territory and not become theatres of war. The Governor, who did not want the war to spread to German East Africa, possibly thought a concentration of troops at a critical moment might have an adverse effect. Possibly he feared native risings and did not want to denude large areas of the colony of Protective troops. Possibly he was an advocate of a show of force everywhere and strength nowhere. The fact that when

war broke out and Lettow carried out a concentration, he did so a day's march from Dar-es-Salaam and not on the Northern Railway, was not because the Governor feared a descent on Dar-es-Salaam and wished to defend it. The Governor maintained that the bombardment of the Coast towns, with their population of European women and children, was to be avoided at all costs and was prepared to surrender both Dar-es-Salaam and Tanga. It must be remembered that the supreme military power in the colony was in the hands of the Governor and Lettow had to make the best of it, at any rate at the moment the war broke out. That Lettow very shortly got the Governor to agree with his views on how to carry on the war was due to his remarkable personality and strength of will. Lettow was in the centre of the colony at the beginning of August when he was summoned to Dar-es-Salaam, where he arrived on the 3rd August. He did not wait to find out whether war was to extend to oversea possessions, or whether England was to be an enemy. Failing again to get the Governor to agree to a concentration on the Northern Railway, he ordered the companies at Dar-es-Salaam (8th) Kilimantinde (4th) Tabora (10th) Ujiji (6th) and Kisenyi (9th) to concentrate at Pugu, a day's march west of Dar-es-Salaam; the 13th company at Kondoa Irangi, and the 1st at Arusha were moved forward to Moshi. This left the 3rd company at Lindi, the 5th at New Langenburg, the 7th at Bukoba, the 14th at Mwanza, the 2nd at Iringa and the 12th at Mahenge. The two latter were left in the interior for purposes of internal security and to enforce the growing demands for carriers, agriculture, supplies and all manner of work; they also acted as large depôts and provided machinery for raising new units. The arrangements for forming companies from the Police allowed of 4 new companies being formed at once,—the 15th at Moshi, the 16th at Tanga, the 17th at Bagamoyo and the 18th at Dar-es-Salaam. Two companies were formed from settlers in the Kilimanjaro area and called 7th and 8th Rifle Companies. (1)

All companies were brought up to a strength of 16 Europeans, 160 Askaris (Native soldiers) and 2 machine guns with 250 company carriers. A system of supply service had not been prepared in peace and had to be organized at once. Fortunately for Lettow he was able to put this in the hands of a retired General, Wahle, who had just

(1) Europeans were transferred from these to Askari companies to fill vacancies, and their places taken by Askaris, so that in the course of 1915 all companies became identical.

landed in East Africa on a visit to his son. The only road communication between the Central Railway and the Northern Railway was from Kilimantinde and Dodoma meeting at Kondoa-Irangi and continuing on through Arushcha to Moshi. Another was at once developed from Morogoro through Handeni to Korogwe.

The size of the colony and the lack of signal communications necessarily made it impossible for the Commander of the German forces to control the operations of detachments on the distant frontiers. At first the operations on both flanks of Lake Victoria were put under the command of the Resident at Bukoba which was in wireless communication with Mwanza, but it was soon found unworkable and the detachments based on Mwanza and Bukoba were placed directly under Headquarters. But everywhere the commanders of detachments rightly appreciated the advantage of the initiative, anticipated the enemy, and attacked him in his own territory, and at the same time used the local tribesmen either as auxiliaries or by raising new companies from them. The most vigorous of the detachment Commanders was Captain Wintgens at Kisenyi, afterwards to become famous as the commander of the remarkable raid back through G. E. A. in 1917.

5. *The operations.*

(a) 1914.

Directly on the outbreak of war the cruiser "Königsberg" put to sea to raid commerce. In its absence the first act of war was performed by the two small British light cruisers, "Pegasus" and "Astraea" who tried to destroy the wireless installation at Dar-es-Salaam on the 8th August. The Germans themselves, however, demolished it, as Lettow says, "from a rather excessive fear of its falling into the hands of the enemy." The Germans also promptly blew up their surveying vessel "Moewe" on the 9th, and transferred its commander and crew to Lake Tanganyika together with a small steamer. The crew of the "Moewe," one hundred Europeans, formed a valuable nucleus for raising a force at Kigoma which soon reached a strength of 400, besides manning two armed steamers and several small craft.

The combination of the bombardment of the Dar-es-Salaam wireless and a suspicious appearance of steamers off the coast, a day's march north of Dar-es-Salaam, pointed to a possible landing. The companies at Pugu, now seven in number, were immediately ordered

to the coast. The attempted landing was as quickly discovered to be a mistake but, for Lettow, a much more serious situation came to light. A British warship had actually landed some marines at Dar-es-Salaam, and Lettow discovered that the Governor, who had moved to Morogoro, had left instructions for a negotiation of surrender. Lettow promptly intervened, and made it clearly understood that he would take over executive power, and that any negotiations with the enemy must be conducted through him alone. Meanwhile the force at Moshi had grown to three Askari companies, two European companies, and a mounted detachment under the command of Major Kraut. Lettow now pressed for the capture of Taveta, weakly held by a few police, and this was accomplished on the 15th August. The Governor was now successfully "persuaded" to agree to the bulk of the forces being transferred to the Northern Railway. While the troops moved, in small detachments by any tracks available, a telegraph line was pushed forward from Morogoro to Karogwe though the new road had not yet reached Handeni. The outstanding events during August on the other fronts were the successful actions of the British on Lake Nyasa, and of the Germans on Lake Tanganyika. On the former the British armed steamer "Gwendolen" disabled the German steamer in the process of being equipped, and so made it possible for the 1st Battalion, K. A. R., to be transported to Karonga. On the latter, the German armed flotilla sank the only Belgian steamer.

September and October passed with anxiety on the side of the Allied colonies as to whether the increasing German patrol reconnaissances over their own respective frontiers would turn into something bigger. On the German side Lettow concluded his concentration of 8 companies for his projected advance against the Uganda Railway *via* Taveta, to which place he moved his own headquarters in October. Reconnaissances of a strength of a company each had reached Tsavo and Mount Longido, but had been driven back. Meanwhile, his lieutenants had penetrated British territory at various points. Three companies had moved from Jassin on Mombassa by the coast route, but were stopped at Gasi. The Germans had now come up against the first reinforcements to the British from outside. The 29th Punjabis of the Indian Army had arrived at the beginning of September and were able to support the King's African Rifles both at Tsavo and Gasi. On the Eastern side of Lake Victoria the Germans had advanced with two companies and auxiliaries as far as Kissii but were

forced to retire by the detachment of the 4th Battalion, K. A. R. On Lake Kivu the Germans had gained command of the waters, seized an island in the centre and compelled the Belgians temporarily to withdraw from the immediate vicinity of Kisenyi, but the Belgians now had a strength of 350 men with a gun to block any further encroachment to the west. There was no further action on Lake Tanganyika, but on the Rhodesian frontier attacks were made on Abercorn, which were eventually repulsed on the 11th September by the reinforcements of the North Rhodesia Police. At the same time the German company from New Langenburg had advanced on Karon-ga, but was successfully thrown back across the frontier by the newly arrived 1st Battalion, K. A. R. At sea the "Konigsberg" caught the small British cruiser "Pegasus" cleaning boilers in Zanzibar harbour on the 20th September and sunk it.

November was to see a serious attempt by the Imperial authorities to take the initiative and pass to an invasion of German East Africa. Under the aegis of the India office a force from India was to make a descent on the German coast, and make good the coast terminus of the Northern Railway. At the same time General Stewart, now in command of the forces in Uganda and British East Africa, was to arrange to hold the German forces in the Kilimanjaro area by seizing Mount Longido and threatening an invasion by that route. The force which was to make the descent on the coast sailed from Bombay on the 16th October, under the command of General Aitken, and consisted of—

Headquarters.—Normal for a division, and with an O. C. and staff for a line of communications.

Tighe's Brigade.—13th Rajputs.

2nd Battalion, Kashmir Imp. Service Infantry.

Compo. Battn., Kashmir and Gwalior Imp. Ser. Infy.

Wapshare's Brigade.—2nd Battn., Loyal North Lancashires.

101st Grenadiers.

63rd Palamcottah Light Infantry.

98th Infantry.

Div'l. Troops.—61st Pioneers.

Faridkot Imp. Ser. Co. of Sappers and Miners.

28th Indian Mtn. Battery.

L. of C. Two railway companies.

So far as the writer is aware nothing has ever been published officially regarding the inception either of the expedition to German East Africa or of the action of Tanga. There is reason to believe that the idea originated from the India Office and not from the Government of India, and that a force, of the same strength as that which eventually went but of a very different composition, was told off in August but was cancelled. The plan was however again brought forward in September. It can only be presumed, from the size of the force and from the fact that included in it were certain Southern India native battalions which had had no recent experience of war or even of north west frontier conditions, that the intelligence before the India Office led them to suppose opposition would be slight and that the German colony would fall an easy prey. There is no doubt that General Aitken, commanding the force, was given orders from home to capture the colony with his two brigades and as a first step to make good Tanga. It is further believed that General Stewart's weak brigade already in British East Africa was placed at his disposal but conditional to it not being used in offensive operations.

On the 30th October the Expedition was met at sea by the Senior Naval officer on the coast in H. M. light cruiser "Fox," and a conference took place. This was followed by a further conference at Mombassa on the 31st attended by the Governor of B. E. A., General Stewart, General Aitken and the S. N. O. At Mombassa, too, General Aitken met the two special intelligence officers detailed by the home authorities and who had been in East Africa already for some six weeks. There is no doubt that General Aitken received corroboration from all these gentlemen of the belief held at home that opposition would be slight and that his force was adequate for the task of capturing the colony. It is believed that he was even pressed to divide his force and make simultaneous descents on Tanga and Dar-es-Salaam. This General Aitken declined to do and issued his orders and instructions to land at Tanga. It may be noted here that the fact of a force being on its way to German East Africa was common property in Mombassa, and that no measures had been taken to control aliens or prevent the coming and going of anyone between the German coast, Zanzibar, and Mombassa. It is believed the plan arranged with the S. N. O. was that he should take the whole convoy close into Tanga, summon the district commissioner on board the cruiser and give him one hour in which to decide to surrender. At the

end of the hour arrangements were to be ready to begin the landing. By daybreak of the 2nd November the convoy lay some 12 miles off and in view of Tanga, but the S. N. O. proceeded into Tanga harbour alone. The District Commissioner did not hasten to obey the summons on board and eventually refused to surrender. The intended operation of at once beginning a landing was not carried out either through some misunderstanding with the S. N. O., or through lack of facilities in tugs and lighters and shortage of pilots who could bring the ships in close. Eventually, between nightfall and midnight General Tighe with the 13th Rajputs and half the 61st Pioneers and the Line of Communication headquarters landed on the cliff edge about one mile south of the entrance to the harbour and two miles east of the town itself.

We will now turn to "the other side of the hill," and see what the Germans did to meet this threat, and as a result of which a serious action involving an unfortunate reverse took place. Lettow tells us that he rather expected a hostile attack on a large scale in the neighbourhood of Tanga, and had gone there at the end of October to discuss a plan of action with the local authority. He knew that the Governor's instructions were to avoid a bombardment of the town. The District Commissioner apparently welcomed Lettow's assurance that he would accept responsibility for any measures that would prevent the Governor's instructions being carried out. Lettow then returned to Moshi. On the 2nd November he was informed by wire that 14 transports and 2 cruisers were lying off Tanga, and that the District Commissioner was protracting the negotiations for its surrender. Lettow at once ordered the 16th and 17th companies, who were in the vicinity of Tanga, to oppose the occupation, and arranged for the immediate move of the 4th, 6th, 9th, and 13th companies and 7th and 8th European companies, who were all at or near Moshi, to Tanga. He himself reached Tanga about 4 a.m. on the 4th November. Meanwhile the 13th Rajputs and one company of the 61st Pioneers had advanced on the town at about 5 a.m. on the 3rd November. Opposed by the 17th company and a detachment of local Europeans and police, the 13th Rajputs had been unable to make headway and were withdrawn about 10 a.m. By that time the remainder of the 61st had landed and were followed at noon by the Loyal North Lancashires and later by the Kashmir and Gwalior Infantry. Force headquarters also landed and established headquarters

at a white house at the promontory on the southern edge of the entrance to the harbour. The troops already landed took up a covering position to allow of the remainder of the force being landed on the morning of the 4th.

By the evening of the 3rd the German strength had been increased to four companies, but their commander had withdrawn his line west of the town at nightfall. Lettow on his arrival personally reconnoitred the front and was cheered to find that the town was not occupied by the enemy. To quote Lettow :—" In the north, the houses of the European town at the harbour provided cover from view, and therefore also from the fire of the cruisers close by. The town was surrounded by continuous cocoanut and rubber plantations which extended almost to Ras-Kasone (the coast line), and in which, besides the native town, a few patches of cultivation were scattered about. Undergrowth occurred along a few points and the ground was absolutely flat. I decided to meet the attack, which I expected with certainty, on the eastern edge of Tanga, and to echelon strong reserves behind our right wing for a counter-attack against the enemy's flank." The good 6th company was ordered to hold the eastern edge of Tanga on a broad front. On its right rear were the 16th and 17th companies and a composite company of small local detachments. To the right rear again were the 7th and 8th European companies and the 13th, which with a total of 7 maxims were under Lettow himself. The 4th and 9th companies with two light field guns had not yet arrived. The European quarter of the town lay against the harbour. From the jetty the railway ran through a cutting along the eastern edge of the town till it turned west between the European and native quarters.

On the 4th November Wapshare's headquarters with 101st, 98th, and 63rd Infantry, landed on the southern shore of the entrance to the harbour, about 1,500 yards north of the landing place of Tighe's brigade where the hospital was established. The transport carrying the Indian Mountain battery anchored in the harbour within 1,000 yards of the town and the battery was fought from its deck. The sapper and miner company did not land. H. M. S. "Fox" lay at the harbour mouth. About 1 p.m. the force was deployed for the advance. On the right was Tighe's brigade with 2nd Kashmirs on the right and the Kashmir half of the composite battalion on the left and the 13th Rajputs in support. On the left was Wapshare's brigade with the Loyal North Lancashires on the right and the 63rd on

the left. The 98th were in support behind the right, while the 101st were echeloned behind the left of the 63rd. The 61st Pioneers were in reserve behind Tighe's brigade. The Gwalior half of the composite battalion of Tighe's brigade was disposed covering the two landing places. Tighe's brigade was successful in driving the left of the German 6th company across the railway cutting and the Kashmir battalion penetrated the outskirts of the town. The 6th company was now reinforced by the 7th and 8th companies and that portion of the line was stabilised. Meanwhile Wapshare's brigade failed to reach the railway or the native town, being successfully opposed by the right of the 6th company and the 16th and 17th companies put into its support. Our troops suffered heavy casualties from machine-guns well sited and hidden in the large baobub trees on the outer edge of the railway line, and the 63rd and 98th were considerably shaken. The 61st Pioneers were put in in the centre but failed to change the situation when about 5-30 p.m. Lettow counter-attacked with the 13th company against the left of Wapshare's brigade. He had noticed that the left of our advance did not reach further south than his own right, and that the 101st had changed their echelon formation in order to support the 63rd. The whole of the German right advanced along with the counter-attack, pressing back Wapshare's brigade. The 101st who made a gallant stand suffered very heavy casualties. The German 4th company arrived from Moshi in time to join in on the left of the 13th before darkness came on. The British commander having no further reserves and with three of his battalions in no fit state for further fighting withdrew both brigades under cover of darkness and formed a continuous defensive position covering both landing places. The Germans made no attempt to follow up, or disturb the new line during the night. On the morning of the 5th the whole force was re-embarked without interference by the enemy, but a number of the wounded who could not be moved were left in the hands of the enemy after negotiations for bringing them off on the morning of the 6th had failed. On the 6th the force steamed away for Mombassa.

The whole Expedition, alike in its inception, the composition of the force, and the orders to the commander, bears a remarkable likeness to many of those expeditions during the Revolutionary war with France about which Mr. Fortescue, in his "*History of the British Army*," has made such caustic criticisms regarding war plans and orders issued by civilian secretaries of state.

Meanwhile General Stewart had sent a column consisting mainly of the 29th Punjabis, some Kapurthala Imperial Service Infantry and the East African mounted rifles against Mount Longido, from which three German companies under Kraut retreated. On hearing of the reverse at Tanga the British Column did not try to push any further but remained in occupation of Longido.

Away to the west a steamer which had attempted to take across from Mwanza a German force of 570 rifles in order to reinforce Bukoba was driven back, but a counter attempt of the British to land a small force near Mwanza was equally frustrated.

Lettow, gauging that the Kilimanjaro area was now strategically the most important, moved the bulk of his companies back to Moshi where he again made his headquarters.

The force from Tanga having landed at Mombassa, all troops in British East Africa and Uganda came under the command of General Aitken, until in December he gave place to General Wapshare. The remainder of the year, in Uganda and British East Africa, was spent in arranging with the civil authorities for the organisation of those colonies on a better basis for war, in giving the troops training under local conditions, and in forming a transport corps. Meanwhile the troops were disposed so as to watch the main approaches to the Uganda Railway and to have a small mobile reserve ready to support any threatened point. In order to block the land approach to Mombassa, a small force was sent to Gasi towards the end of December which occupied Jassin after driving out the German detachment.

(b) 1915.

Lettow took this movement to Jassin in December to be the first step to a new attempt in 1915 to reach the Northern Railway at Tanga. There is no authoritative account of the reason for the advance to Jassin, or of the strength of the British forces, but Lettow claims that documents captured on the 19th January 1915 showed that there were the equivalent of twenty companies under General Tighe. Lettow once more brought companies down from Moshi, and by the evening of the 17th of January had concentrated nine companies in front of Jassin. His information showed that a strong post was being established at Jassin and that the main force was further in rear. On the 18th he attacked. Casualties on both sides were heavy, but the result was that the post, containing half a battalion of Kashmir

infantry, became isolated from the main force before arrangements were completed to provide it with water or a reserve of ammunition. The attempt on the 19th to relieve the post failed and its garrison was forced to surrender.

The Germans remained in possession of Jassin while the British column withdrew after establishing a post at Gasi. Lettow then transferred his companies back to Moshi and considered the question of an advance into British East Africa. He was however driven to the decision to forego such an operation. His reconnaissances showed that a force larger than a company could not be maintained across the waterless and foodless tract of country between Taveta and the Uganda Railway. Losses, particularly in white personnel, such as the Germans had suffered at Jassin, could only be borne in exceptional cases, nor would his ammunition allow of more than three such actions,—the expenditure at Jassin had been 200,000 rounds. He therefore decided to restrict operations to guerilla warfare.

Early in 1915 General Wapshare was recalled to India, and General Tighe took over the command in British East Africa and Uganda. With the troops at his disposal he could only assume a purely defensive attitude, but the main factor in the situation was to ensure the protection of the Uganda Railway. The base line from which German incursions were most likely to start was from about twenty miles north to twenty miles south of Taveta. The British frontier districts were divided into two areas. The northern, from Lake Victoria to Mount Longido inclusive, was put under the command of General Stewart with headquarters at Nairobi and the most important outposts were at Kisii and Kajiado; Longido was evacuated by us, as being too far distant, in April. The southern area stretched to the sea and was under the command of General Malleon with headquarters at Voi. This was the area most vulnerable to attack. Two lines of posts were thrust out towards the Kilimanjaro area, one from Tsavo ending at Mzima, the other from Voi along the old caravan track, to Maktau. Along the latter route a strategic railway was put in hand and completed as far as Maktau by June. It was hoped the posts on these and the Kajiado line, with their small mobile columns, would prove a deterrent to raiding parties whose objective was the Uganda Railway. On the railway itself a close defence was provided by posts guarding the bridges, by reconnoitring patrols, and by an armoured train.

On the whole these measures were successful. In no case did the enemy destroy a link in the communications, or interfere with movement to more than a temporary extent. Troops were few, duties were many and harassing, and the climate, particularly on the Mzima line, and at Gasi, was very unhealthy. Encounters between reconnoitring patrols were frequent. Three times in the course of the year the British forces carried out limited offensive operations. In June a successful raid was made on Bukoba, on the western shore of Lake Victoria, by a column transported from British East Africa. The small enemy force was driven off and the fort and wireless station destroyed. In July a column under General Malleson unsuccessfully attacked a German force at Mbuyuni near Maktau, and in September a column from Kajiado was equally unsuccessful in an attack on a force at Longido. By October it was definitely known that large reinforcements would be sent from South Africa, that General Sir Horace Smith-Dorrien would come out as Commander-in-Chief, and that East Africa would be invaded. The remainder of the year was spent in strenuous efforts to prepare for the concentration of this force; and to organize transport. It was obvious that the strategic railway to Maktau would play a most important part in the advance.

In February 1915 the Navy in African waters had been increased by a flotilla of armed trawlers and a blockade of the coast had been announced and put into practice. It was a veritable disaster that the measures were not successful in preventing a blockade runner getting into Mansa Bay near Jassin in April. It was caught up by the British flagship, bombarded, set on fire and then left to sink in shallow water, with the result that the Germans salvaged the entire cargo, thereby replenishing their scanty supply of ammunition. It has been mentioned that in the previous autumn the German cruiser "Konigsberg," after sinking the "Pegasus" in Zanzibar harbour had elected to take refuge in the delta of the Rufiji river. The main naval operation of 1915 was to be the destruction of this ship. As a first step the island of Mafia which lay some 25 miles off the delta was captured in January and became a base for reconnaissances by air and water to determine the position of the "Konigsberg." Two monitors were sent out from England. By July arrangements were completed for the bombardment of the imprisoned cruiser and on the 11th July she was successfully destroyed by the long range-fire of the monitors, but the Germans had previously removed her armament. The 4-inch

guns were mounted on wheels and skilfully transported many hundreds of miles across country to provide artillery support to the German forces during the 1916 operations, while the crew took their place in the land forces. Meanwhile from time to time the German coast towns were subjected to bombardment by the British navy.

On the Western sections of the German frontier the Belgians, the men of Northern Rhodesia, and of Nyasa continued each to deal with the problems of their own local frontiers. From June onwards the Belgians, after getting possession of Kisenyi, made fruitless attempts, with the means at their disposal, to gain the ridge of Sebea to the north-east of Kisenyi, where they were opposed by the energetic and resourceful Wintgens. It was not until April 1916 when their organization for the 1916 offensive was completed, that they were successful. On the Rhodesian frontier it was the Germans who assumed the offensive by concentrating five companies for an attempt on Abercorn. But first they had to take the outpost of Saisi. This post was most gallantly defended by a small mixed garrison of Rhodesians and Belgians and was relieved on the 24th July by a Belgian column which drove back the Germans. Fife however remained in German hands till October. Further East neither side had sufficient forces with which to attempt anything more than watch and ward. It was a year of incessant patrol encounters everywhere and Lettow heard sufficient to show that by the end of the year preparations were well under way for the invasions of the German territory from the Belgian frontier in the north-west and from the north-end of Lake Nyasa. It was to be from this latter as a base that the Rhodesian and Nyasa troops, reinforced also from South Africa, and organised as one force, were to advance under the command of General Northey. Christmas day of 1915 on Lake Tanganyika was to see a fitting climax to a great achievement. All the year the Germans had held undisputed possession of its waters. It was essential that the Germans should be overmastered before the general offensive took place in 1916. The Admiralty therefore fitted out two motor launches, each of $4\frac{1}{2}$ tons, 40 feet long, 7 feet beam and 15 knot speed, and armed with a 3 pounder gun christened "Mimi" and "Toutou" and under the command of Lieut.-Commander Simson, R. N., with 28 men, they were shipped from England on the 12th June and reached the Cape at the beginning of July. From there they were sent 2,300 miles by rail through Rhodesia into the Belgian Congo. The next stage was 150 miles of

bush track crossing a range 6,000 feet high. After 15 more miles of rail they were floated on to the Lualaba river and towed for 400 miles to Kabalo which was reached on the 22nd October. Thence the railway carried them to Tanganyika. The arrangements for launching them were not completed till Christmas Eve. The next day, while Sunday service was being held, the German Gunboat "Kingani" of 53 tons passed by. "Mimi" and "Toutou" at once gave chase and after a ten minutes fight the "Kingani" surrendered. The Germans were no longer the masters, and by February 1916, their flotilla ceased to exist.

Within German East Africa, Lettow had used the year to probe all the resources of the country. He says it was evident that the war would be prolonged and the stock in the Colony would become exhausted. Hand spinning and weaving were taught and spinning wheels and looms built, so that the produce of the large cotton fields were in time turned into serviceable cotton cloth. Plantation factories were adapted to produce various means of subsistence. Boot-making, in particular, was actively developed. Medical necessities were produced from the natural resources of the country. The cultivation of supplies in back areas was extended and the harvests garnered into strategically placed depôts. The number of companies gradually increased to 60. Owing to the limited number of suitable European and reliable native N. C. Os., it was not deemed advisable to increase further the number of companies but their strength was raised to 200. By the end of the year the German forces had reached the strength of 2,998 Europeans and 11,300 Askaris, including, as Lettow says, naval personnel, administrative staffs, hospitals, and field postal service.

The end of the year 1915 coincided with the end of a period of 17 months during which the meagre forces of the allies had been subjected to a most harassing form of war along 1,700 miles of frontier. The weary and often dispirited troops could now at last look forward to a concerted invasion of the enemy country by adequate forces.

Scale of Miles
0 20 40 60 80 100

NOTES:

- (a) For Maitani Rly 1914/15
- completed to near Moshu in
- (b) Tramline made in 1918 (Gard)
- (c) Made by Germans in 1916
- (d) " " " " " 1918

Stanleyville

G

N

O

C

A

Kabalo

THE JAPANESE ARMY AND NAVY.

A Bulwark against Bolshevism.

BY BREVET MAJOR B. R. MULLALLY.

In his article, "The Bolshevik Menace," which appeared in a recent number of the Journal of the United Service Institution of India, "Mongolian" referred to the position of Japan as the great antagonist of Bolshevism in the Far East.

It is not proposed in this article to enlarge upon the strategic, political, or commercial factors involved in the present situation in the Far East, all of which contribute towards the antagonism of Japan to the Bolshevik machinations in Asia, but to indicate, rather, something of the psychological aspect of this antagonism, and to show how great a part is being played by the Japanese Army and Navy in combating the insidious propaganda of revolution by means of which the Bolshevik rulers of Russia hope to undermine the stable character of the Japanese people.

That this propaganda is likely to meet with any great measure of success is inconceivable to anyone who has been in close touch with the Japanese people, and has been able to study the national character.

The whole social structure of Japan is based upon the family system.

The family is everything, the individual nothing.

The Japanese child learns, as soon as he can learn anything, that the first duty of the individual is subordination to the common good of the family.

With the growth of the feudal system the family system was by degrees extended until it included the larger idea of loyalty to the clan, and, finally, on the unification of the country at the Restoration, it reached its present stage of development which regards the whole nation as one large family whose father is the Emperor.

Just as self-sacrifice for the good of the family is the ideal towards which each of its members strives, so patriotism, the subordination of the individual to the interests of the nation, is held to be the first duty of the citizen, and, as the will of the father is supreme in the family, the Emperor, the father of the great family of the nation, is regarded as the natural arbiter of the destinies of his children.

Such, then, is the foundation upon which the national character is built, and it is now proposed to show how the edifice has been buttressed and strengthened until it has reached a degree of stability which is calculated to withstand a strain greater than any to which the winds of revolutionary propaganda is likely to subject it.

The salient facts of Japanese history are sufficiently well known not to require recapitulation here—centuries of isolation and semi-barbarism followed, a bare seventy years ago, by the tearing aside of the veil and sudden contact with the outside world.

The crisis found Japan in the curious state of dual rulership which had obtained since the 12th century when, in 1185, the rivalries of the feudal barons came to a head in the grouping of the clans under two standards, those of Minamoto and Taira, followed by the victory of the former who assumed absolute control of the country.

That this did not entail the deposition of the Emperor brings to light the immemorial attitude of the Japanese people towards the throne.

The Emperor was, and is, regarded as divine, and any attempt to usurp his sovereignty would have aroused such an outburst of indignation that, throughout the long series of struggles between the feudal barons the person and title of the Emperor remained inviolate.

We then have the spectacle of the Emperor and his court at the ancient capital of Kyoto, surrounded by dignitaries possessing high-sounding titles, occupied with ancient, meaningless ceremonies and steeped in drowsy dilletantism, while the real power was exercised by the Shogun at Yedo, the modern Tokyo, supported by virile, hardy retainers, who constituted the privileged warrior caste—the Samurai.

The menace of foreign aggression provided the lever by means of which the leaders of the Romantic movement, which had long been gathering strength, hoped to attain their ends.

Had the later representatives of the Tokugawa family possessed the ability and character of the great founder of the line, Iieyasu affairs might have taken a very different course, but the vacillation and inefficiency of his descendants caused wide-spread dissatisfaction and a progressive weakening of their authority, especially over the more distant parts of the country, notably the great fiefs of Satsuma and Choshu.



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This dissatisfaction found expression in the Romantic movement referred to.

Just as in Europe there had been a revolt against the bondage of Greek and Roman culture, so, "in Japan there was a general revulsion of feeling in favour of a return to the ancient native culture which had long been overlaid by the imported Chinese civilization, and the abolition of the divided authority."

The real leaders of the movement were a group of Samurai retainers of Satsuma and Choshu who worked behind the scenes in the name of their overlords.

Accused of betraying the country to the hated barbarian, the Shogun was eventually compelled to relinquish his power in favour of the Emperor.

The astute brains controlling the movement realised that with the advent of the foreigner Japan's isolation was destroyed for ever, and that if she was to take her place in the new world, which had suddenly opened out before her, she must shed the narrow prejudices and mediaeval customs in which centuries of sleep had wrapped her, and learn the ways of the world if she would survive.

In order to meet the new situation unity was essential, and this small group of farseeing statesmen seized upon, and exploited to its fullest extent, the one element which would bind the whole nation.

Although for centuries deprived of temporal power, the Emperor was regarded as the spiritual ruler of the country, descendant of the Sun Goddess, whose line had been unbroken since the dawn of time.

Here then was the one unifying factor which would be acceptable to all.

It was thus determined to restore the Emperor to power and, under the slogan of Sono-Joi, "Reverence the Emperor, Expel the Barbarian," the Shogunate came to an end, and the divided authority of centuries gave place to the restoration of the throne to a glory such as it had not known for long ages, and the divine person of the Emperor became the inspiration of the nation once again.

Here we have one of the fundamental ingredients of the Japanese character, the factor which unified the nation and which has been its lodestar ever since—reverence for the throne, but a reverence which regards the Emperor not as human but as divine.

With the downfall of the feudal system the bands of armed retainers maintained by the barons, the Samurai, were deprived of their means of support and became a serious problem for the new government.

The problem was solved by employing them as officers in the New Army, Navy, Police, and to a lesser degree, the Civil Services.

The Government realised that in the Samurai tradition lay a great power for good, and that the diversion of this tradition from the narrow channels of feudal loyalty to the broad flood of newly-awakened nationalism would prove an immense accession of strength to the new administration once the support of the warrior caste had been secured.

Furthermore, it was realised that by inducing the Samurai to relinquish their peculiar privileges and aloofness from the masses, and merge with the commonalty in the New State, while still retaining all that was best in their traditions, these traditions would in time spread beyond the comparatively small caste of the Samurai and the spirit of Bushido, the Way of the Knights, would permeate the whole nation.

Loyalty, personal courage, frugality, death rather than dishonour, and death in defence of the Fatherland, the greatest honour of all, these are the tenets of Bushido.

Bound up with Bushido is Shinto, the Way of the Gods, Ancestor Worship.

Here again the creators of the New Japan appreciated that in Shinto they had a third powerful agent for the development of the national spirit, and did not fail to make full use of it.

It has been stated by some, chief amongst them Professor B. H. Chamberlain, probably the greatest European authority on Japan, that Shinto did not exist before the Restoration, and that the cult was manufactured for the purpose of developing that fervent nationalism which was necessary for the consolidation and preservation of the new order.

Be that as it may, it cannot be gainsaid that Shinto has proved its value in the building up of that wonderful spirit of patriotism which has raised Japan to its present position.

That the stress and strain of intercourse with the outside world, in all phases of activity, with the inevitable results of a changing perspective and the introduction of new ideas, political, moral, and

economic, might in time undermine the purity of the national ideals, has long been the pre-occupation of the rulers of Japan.

It has been realised that if the best that is in the race is not swept away by the ever-rising tide of modernism, it must be focussed in those sections of the nation which are best able to preserve it.

With the Restoration clanship did not die out and the Samurai, by instinct no less than necessity, naturally gravitated to the fighting services where the clan instinct is still strong, men of Satsuma generally being found in the highest positions in the Navy, and those of Choshu in the Army.

It is in the fighting services that the Samurai traditions of loyalty, patriotism, frugality, and self-sacrifice, and the cult of Ancestor Worship, are enshrined, reach their highest expression, and are fostered and consolidated.

Thus it is that the Army and Navy of Japan have become the repository of those virtues which have made the nation great.

The Military History of Modern Japan teems with examples which show that these virtues have been maintained in the past, and the gallantry of the Japanese soldier in the Russian War showed the world that his self sacrifice and patriotism are very potent forces.

A later notable example of the manifestation of the Samurai spirit was provided by the suicide of the veteran hero of the Russian War, General Nogi, who, on the day of the funeral of the late Emperor Meiji, committed hara-kiri in the traditional style, in which act he was followed by his wife.

A mistaken ideal this, perhaps, but none the less a splendid one, which led the old soldier, with his honours thick upon him and the prospect of passing the evening of his days in well earned repose, revered by all, to forsake everything because he deemed it his duty to follow his master even in death.

An instance of this same sentiment is within the personal knowledge of the writer, and is quoted as showing that the old traditions are by no means dead.

A young officer of an Infantry Regiment fell out during a route march, and the same evening was found dead in his tent, having committed hara-kiri.

He left behind him a letter to his Commanding Officer in which he said that he felt that for an officer to fall out on the march was

a disgrace to his regiment and to himself and that he had therefore taken the only course open to him to wipe out the stain on his honour.

With a corps of officers largely recruited from Samurai families, and imbued with the spirit of their ancestors, it is easy to see that the Fighting Services form the best of all possible vehicles for the propagation of those ideals which it is desired to maintain throughout the State, since, under the system of Conscription, the training of the best of the youth of the nation is in their hands.

Nor is this training in the tenets of Bushido by any means confined to the Regular Forces.

Military Training of an elementary nature has always been the rule in Japanese schools, and under the recent scheme of Army Re-organisation this has been considerably extended, the training now being in the hands of officers of the Regular Army on the Active List.

In addition to this, instruction in the history of Japan, with special emphasis on the exploits of the Army and Navy, plays a most important part in the curriculum.

Hero-worship is inculcated and Young Japan is taught to believe that the glory of the Empire has been attained by the devotion and valour of her Army and Navy, that her greatness has been built up through single-minded devotion to the ideals of Bushido, and that the preservation of these ideals alone will enable that greatness to be maintained and extended.

In the Services themselves "Moral Training" plays a very important part in the instruction of the recruit.

He is taught that the Army and Navy have never been defeated in War and that, so long as the spirit of their ancestors is maintained, they will be as invincible in the future as in the past.

With the constant inculcation of such ideas into a large section of the rising generation, it can readily be seen that whatever weakening in moral fibre and relaxation of the simple Spartan virtues of the past may result from the spread of modern thought, there is a powerful counter-influence always at work which is ever being reinforced, its agents the best blood in the country.

In Japan there is little of that resentment against Military Service which is to be found in most countries where Conscription is enforced.

The Japanese child is subjected to rigid discipline from his earliest years, so that when he joins the Army or Navy he finds the discipline little different from that to which he has been accustomed in his home and at school, and it scarcely irks him.

The Fighting Services are very much a part of the nation, and the relations between them and the civil population are of the most cordial description.

To attend Grand Manœuvres in Japan is to receive striking testimony of the enthusiasm of the people for the Army.

The manœuvre area is visited by thousands from the neighbouring districts, special trains are run, work ceases, and the whole population turns out to see the troops and pay homage to the Prince Regent, who invariably attends in person.

Nor is this enthusiasm confined to Grand Manœuvres.

The writer had the good fortune to accompany the Infantry Regiment, to which he was attached, on a prolonged route-march through a mountainous district in the depth of winter and could not but be struck by the attitude of the country folk.

The entire population of every village through which the regiment passed turned out to welcome the troops, while the householders upon whom the officers and men were billeted, could not do too much for the comfort and entertainment of their guests.

The great earthquake of September, 1923, did much to consolidate the regard of the nation for the Fighting Services.

With Tokyo and Yokohama in ruins, and a great area devastated, the people instinctively looked to the Army and Navy for help in their dark hour.

Nor did they look in vain, and the magnificent work of the soldiers and sailors in the preservation of order, organisation of supplies, restoration of communications, and salvage, was second only to the heroism of the nation at large in the face of that stupendous calamity.

Saviours of the nation in War, the Army and Navy did not fail in Peace, and their place in the affection of the people has been made more secure than it has ever been since the days of the Russian War.

Unless, and until, the Japanese Army and Navy forget their proud traditions, and forsake the Spartan virtues and high ideals of their forebears, the evil teachings of Bolshevism will gain but few adherents in the Land of the Rising Sun.

THE TACTICAL VALUE OF MILITARY HISTORY.

By

CAPTAIN L. GILBERT, M.C.

Having been privileged to hear Captain Williams' lecture on "The value of a study of campaigns prior to the Great War" which appeared in the issue of this Journal for April 1926, the writer wishes to develop a point on minor tactics which he raised at the subsequent discussion.

The occasion of the lecture was the article referred to by Capt. Williams entitled, "The practical value of Military History," in the Army Quarterly of October 1924. It is not unlikely that this article was a "leg-pull," having the laudable object of calling attention to the real value of military history; or it may be another manifestation of the tendency, noticeable since the Great War in which so many civilians achieved success as soldiers, to belittle the military profession as such and to question the utility of present methods of training.

Capt. Williams has proved his case for commanders and staff in respect of strategy. He has not, it is suggested, been so successful in producing a strong case for the study of military history by regimental officers, and has yielded completely to the enemy on the ground of minor tactics, for he considers military history valueless for minor tactics; and it is here that I do not agree with him.

Let us first clear the air about certain distinctions. The conception of strategy and grand tactics as mysterious and wonderful arts of an entirely different nature from minor-tactics, and the fact that for examination purposes subalterns are obliged to study military history mainly from a strategical point of view, are responsible for the view held by some regimental officers that, for their actual work, military history has no utilitarian value. The regimental officer's work is mainly concerned with minor tactics, and for training in these he is apt to rely on tips from the manuals, patterns, and commonsense. In this paper I hope to show that valuable tactical instruction can also be derived from military history.

The distinctions between strategy, grand tactics, and minor tactics are distinctions of degree, not of kind, for war is based on

principles which are, as clearly shown in our manuals the basis of the operations, of the section, platoon, and company as of the division, etc. In the minor tactical application of the principles one serves a real apprenticeship for their grand tactical and strategical application. The term "grand tactics" is often conceived as meaning "magnificent tactics." This is perhaps due to the French origin of the term. But it is clear from Colonel Henderson that the term means "great" or "more complicated" tactics, that is, the operations of the commander who has to combine the action of larger numbers and a greater variety of weapons than does the battalion or company commander. This is what he wrote ;—

"the difference between Minor and Grand Tactics should be clearly defined. This last is difficult, for in many respects the two branches of tactics overlap ; and I must regret that as I can nowhere find, although I have no doubt that it exists, an exact definition, I have to ask my readers to accept one of my own, which I cannot help suspecting will do very little towards establishing the distinction which undoubtedly exists. However. . . . I may say at once that Minor Tactics include the formation and disposition of the three arms for attack and defence, and concern officers of every rank ; whilst Grand Tactics, the art of generalship include those strategems, manœuvres and devices by which victories are won, and concern only those officers who may find themselves in independent command.

" Minor Tactics are more or less mechanical. They may be called the drill movements of the battle-field ; they deal principally with material forces, with armament, fire, and formations ; and their chief end is the proper combination of the three arms upon the field of battle.

" Grand Tactics are far less stereotyped. They are to Minor Tactics what Minor Tactics are to drill, *i. e.*, the method of adapting the power of combination to the requirements of the battle ; they deal principally with moral factors ; and their chief end is the concentration of superior force, moral and physical, at the decisive point." *

*The Science of War, pp. 167, 168. Col. G. F. R. Henderson C. B.

This, written in 1894, still holds good in the main. In fact grand tactics have become even grander and more complex, for there is now a much greater variety of weapons to be combined on the modern battle field. But we do not now regard the movements of subordinate units as "more or less mechanical." The old battle drill movements have been replaced by an "ordered disorder." To baffle the artilleryman and the machine gunner we aim at irregularity. Regular lines are seldom used except to advance behind a barrage or for assault. For other movements we use the more easily manœuvred blob or an irregular discontinuous line. It is true that during the war we adopted normal formations, but that was on account of the low standard of training and the fact that subordinate leaders had little knowledge of principles and how to apply them. It is true also that our manuals advocate certain formations such as the square, the diamond and the triangle, but these are not stereotyped. They are handy formations which can be modified to suit varying conditions. There is nothing mechanical about the composition of a particular Advanced Guard or Van Guard; and defensive systems are conceived with the idea of combining discontinuous yet definite lines with areas. Moreover, in modern minor tactics we are more concerned with moral factors than with the drill aspect of battle formations. One of the subordinate leader's most difficult problems is how to maintain control for as long as possible over four units disposed about an area in which voice control is impracticable. To enable us to reap the full advantages of modern inventions more time than ever must be spent on training the individual soldier's mind. As modern invention increases the individual soldier's power to kill, close formations which tend to become stereotyped and can be practised as a set drill, will disappear; extensions between groups will become wider, individuals will be more often alone and find themselves more often in situations where they have to think for themselves. Hence the training of the soldier is a problem of increasing difficulty demanding that higher discipline which is independent of the actual and visible presence of the leader, and greater tactical knowledge.* This ideal will not be reached by means of pattern formations which can be practised as a drill. We must aim at instilling into all ranks a knowledge of the principles. The mere reading of these in the manuals or their exposition without illustration is a dull process devoid of all interest, which is the basis of

*See Section Leading in Attack and Defence 1923—Introduction.

all successful learning and teaching. Interest can be aroused and the principles can be made to live by teaching minor tactics from military history, or perhaps through the gifted imagination of another "Old Lukoie" who shall give us another series like "Duffer's Drift," which after all was but military history in another form.

The question now arises, where to begin in the study of tactics? Napoleon excluded them when he enjoined the study of past campaigns, not, I think, because he thought such study valueless, but rather because he knew that the necessary detail was not in his time available. Fortunately the accounts of the Great War provide ample tactical detail; and if one considers but one instance, the affair of NERY, it is safe to say that had the forces involved included Tanks and Armoured Cars the same principles, at least, would have been involved as in the actual incident. Indeed such an incident supplies the very basis on which to start a speculation on tactical methods of the future. And therein, exactly, lies the value of studying tactics by way of military history, namely, to learn to apply the principles in varying conditions. For from whatever angle one approaches the subject, one's object is certainly not to gain a mastery of facts in the pious hope that the battles of old may one day be rehearsed on appropriate ground, nor even to provide an illustration of every principle. It is not contended, for instance, that the study of mathematics, a most exact science, makes its devotees punctual. On the contrary mathematicians are notoriously unpunctual persons; but the solution of numerous quadratic equations does impart a measure of skill for solving similar problems. In a similar way, a study of the development of Tactics, by which the student becomes familiar with the application of principles to varying cases, must be of value when, with novel armament, he has to apply the principles in novel conditions in the next war.

Naturally the farther back one goes the more meagre does the detail become. Nevertheless officers should know the reasons which underlie modern tactical methods; only with such knowledge can we be expected to adapt them successfully to modern conditions. How far we delve into the past will largely be determined by our personal interests, but I warrant that he who follows the developments of the Great War will be driven to enquire into the Tactics of the Russo-Japanese War, the S. African War, the Franco-Prussian War, and the American Civil War—if not indeed further.

But as my object is mainly to show the utilitarian value of military history for modern Tactics I will confine myself to three particular grounds. The first is the change that has taken place in battle unit commanders. In the 17th century and up to 1815 the battle unit commander was the battalion commander. In the wars from 1862 to 1870 he was the company commander. To-day he is the section commander. The second is that the latest tactical fashions are not essentially new. The third is that the soldier of the 18th or 19th century had generally more opportunities for a varied experience of active service than is possible to-day. In those days seven campaigns was not a high average for any soldier, but the modern soldier will be limited to one or two at most. Illustrations may make these conditions clearer.

Towards the end of the Great War, a tactical method commonly known as "Soft Spot" Tactics was much in vogue as a means of penetrating the continuous front and also of reducing casualties. That there is nothing new in these Tactics is apparent from the underlying principles, *viz.*, to reinforce success rather than failure, or, as at Blenheim, to concentrate superior force against a decisive and weak point. At Blenheim the French position was on a front of something over 6,000 yards between the R. Danube and the hills, and behind a marshy stream, the Nebel. The bulk of the infantry was posted in three strong points, on the right the village of Blenheim, in the centre the village of Ober Glauheim, on the left the village of Lutzingen and the Eichberg. The gaps were comparatively lightly held by cavalry. Marlborough's original plan was for Eugène to envelop the French left whilst he attacked frontally, concentrating against Blenheim. Perceiving this, Tallard reinforced Blenheim with still more infantry. Lord Cutts attacked the village without success for 5 hours, when Marlborough, perceiving now the weakness of the French dispositions between the right and centre strong points, "soft spotted" with the result shown in Plan I. The fault of the French dispositions was that the gap between the two villages was too wide to be covered by the flanking fire of those days from the strong points on either side; and further they trusted too much to the difficult nature of the ground. (This is a point to be considered when devising modern "tank-proof" localities).

Consider also the manœuvre by which Marlborough brought off his decisive stroke at Ramillies. He engaged the enemy all along

the front, concentrated as if for decisive attack against Ramillies and Autre Eglise villages, then moved his reserves along a flank by a covered approach to the decisive attack against Ottomond's Hill. See Plan II.

These methods are not unsuited to modern armament, nor can they be reckoned as being examples on too large a scale for battalions, companies, platoons, and sections. The whole front at Blenheim was little more than 6,000 yards, and the average frontage of a battalion was 200 yards.

For a study of tactical formations take Austerlitz. There Napoleon based his formations on the principles of fire and movement, and depth, whilst the Allies relied on Frederick's methods which took little account of the preponderating rôle of fire-arms. Napoleon took advantage of his well-trained troops to combine mass and line. His Divisions were disposed in lines of battalion columns when approaching the battle-field. On deployment certain units deployed, others remained in columns on the flanks of the deployed units. Artillery was disposed in the intervals between the battalions and on the flanks. His object was to be able to oppose a line of fire to the enemy whilst at the same time having close columns ready for attack if required. That is an application of the principle of fire and movement. The second line was not independent of the first but its support and immediate stay. That is an application of the principles of depth, and reinforcement without admixture of units. (It is interesting to note that the British units which were specifically trained for the Battle of the Somme were taught to fight in depth by the employment of a normal tactical formation).

Note how this worked in Vandamme's Division during the attack on the Pratzen Heights. When the Allies saw the French advancing in open columns of companies, they tried to wheel into line by means of one of the Frederician manœuvres. The French withheld their fire and continued their advance with shouldered arms, pushed straight up the hill and turned the village of Pratzen. When within 100 yards of the enemy the whole division deployed, fired volleys and then charged. Briefly the method was :—Handy columns for preliminary movements and manœuvres, line for actual combat. This method is still in fashion although the bayonet be seldom blooded. Line, much extended in these days, is essential for full use of fire-power whether of rifles or automatics.

Such methods can only be effectively used by well-trained troops led by leaders who have a knowledge of principles and how to apply them. Napoleon's armies contained many such in 1805 when the French Army was in the zenith of its efficiency. In this connection it may be noted that in any war the necessity will arise of adjusting war-training to the special needs of the campaign. War-training is not the outcome merely of the light of nature, or of day-to-day adjustments to embody the experiences of the battle-field. For instance, the routine for holding trenches in the late war was clearly based on the principles underlying Outposts. Again, the adoption of "normal" formations was not a definite contradiction of the truth enunciated in the pre-war F. S. R. and in our present Infantry Training, I. T. 1921, Vol. II, Section I, para. 1. It was a temporary adaptation to circumstances demanded by the low standard of training. Compare the formations of the French with those of Wellington's troops in the Peninsular War. Wellington could use his veterans in line and so gain the advantage of greater fire power. The French were obliged to employ their half-trained conscripts in the old-fashioned heavy column. It is not to be supposed that Wellington had suddenly devised this method. The Hon'ble John Fortescue traces its development in the British Army thus:—

".....in respect of musketry the British were far ahead of any army in Europe. During the War of American Independence they had been called upon to meet an elusive enemy, who had carried marksmanship in civil life to a high degree of perfection; and they had been obliged to adapt themselves to that enemy's tactics. The result had been not only great improvement in shooting, but a definite and far-reaching change in tactical formation. Hitherto the British Infantry, even as all the infantry of Europe had been drawn up three-ranks deep for action the front rank kneeling and the two rear ranks firing over their heads. In America the British soon learned to fight in two ranks only, frequently also loosening their formation to encounter scattered sharpshooters in woodland fighting. This formation in double rank though not laid down in the regulation, became the rule after the end of the war, and it signified the very important fact, that given an equal number of men, the British front of fire was longer than that of any other nation. The soundness of the lessons learned in America had been tested against French regular troops in St. Lucia

in 1778. There thirteen hundred British soldiers, fresh from active service in America, repulsed twelve thousand Frenchmen, inflicting upon them a loss of four hundred killed and twelve hundred wounded.”*

The spade work of these tactical developments has been described in detail in Col. Fuller's “Sir John Moore's System of Training.” The value of such a book lies not so much in the collation of much historically interesting detail as that it demonstrates how a successful system for the future must be based on the experiences of the past. The Light Brigade which Sir John Moore trained at Shorncliffe was the leaven which animated the armies of the Peninsular War and Waterloo. This is not to deny the qualities of Wellington as leader and administrator. For success in war three main things are necessary, good leadership, good administration, and good training. Wellington supplied brilliant examples of the first two, but Sir John Moore laid the foundations in the British Army of the last. His system was no mushroom-growth or sudden inspiration of genius. It was the result of the studied application of his own and others' experiences to the needs of the then modern conditions of warfare.

Similarly, the lessons of the S. African War gave our “Old Contemptibles” a superiority in fire-tactics over the Germans in 1914 which made up for our weakness in machine-guns. It will be here objected that a more imaginative interpretation of the lessons of S. African War and of the Russo-Japanese War would have secured this superiority at a less expense of men by providing more machine-guns at the outset. The fact is that there were by no means wanting those who contended for more machine-guns prior to the Great War. This demand was not met for three reasons: firstly, distrust of a weapon which had been subject to frequent mechanical failures in the S. African War; secondly, the perennial financial stringency; thirdly, an examination of the armament of the divisions of the leading European armies in 1914 reveals the fact that the German, French and British Divisions were each armed with 24 machine-guns; and apart from this it is significant that the armament and composition of each of these divisions is remarkably similar, so that it might well have been argued, by the politician, that what was good enough for a continental army was good enough for us. That the Germans were able to make good this shortage more rapidly than we, was mainly due to

*“Wellington,” pp. 7, 8. The Hon. John Fortescue.

their greater economic preparedness for war. In any case the development of infantry fire-power was along the lines of the more easily manœuvred automatic rifle rather than of the heavier machine-gun, which came to be regarded as an arm distinct from infantry.

As a last illustration, I will quote an extreme example to show how a knowledge of the distant past was turned to account in very different circumstances in the Great War, more by way of interest, as showing the jam which may now and again be found under the powder than to support the foregoing arguments. The incident is described in "The Romance of the Last Crusade" by Major Vivian Gilbert. It is here re-quoted from "Warfare" by Col. Spaulding, Capt. Nickerson, and Col. Wright.

"February 13th we took over the Deir Ibu Obeid-Ras es Sufa Hizmeh line from the 53rd Division, and on the 14th of the same month operation orders were issued for an attack on Jericho with the object of driving the enemy across the river Jordan.

Before the main attack took place it was necessary to strengthen the line by the capture of a small village, directly to our front, known as Mukhmas or Mickmash. Mickmash was on a high rocky hill. The brigade outpost line was on a chain of hills, too, and between us and the enemy ran a deep valley.

A frontal attack was decided upon: that is, supported by artillery and machine-guns, the brigade was to advance down into the valley just before dawn, and take Mickmash from the front.

All orders were given out and the troops were getting what rest was possible before zero hour.

In his bivouac, by the light of a candle, the Brigade Major was reading the Bible. When the raid was first discussed the name Mickmash had seemed vaguely familiar, although he could not place it. Just as he was about to turn in for the night, however, he recollected and thought he would look it up. He found what he was searching for in Samuel I, Chapters 13 and 14.

'And Saul and Jonathan his son, and the people that were present with them abode in Gibeah of Benjamin; but the Philistines encamped in Mickmash.....Now it came to pass upon a day that Jonathan, the son of Saul, said unto the young man that bore his armour, 'Come let us go over to the Philistines'

garrison, that is on the other side.' But he told not his father.... And the people knew not that Jonathan was gone.

And between the passages, by which Jonathan sought to go over unto the Philistines' garrison, there was a sharp rock on the one side, and a sharp rock on the other side: and the name of the one was Bozez, and the name of the other Seneh.

The forefront of the one was situated northward over against Mickmash, and the other southward over against Gibeah.

And Jonathan said to the young man that bare his armour, 'Come and let us go over unto the garrison....It may be that the Lord will work for us: for there is no restraint to the Lord to save by many or by few.'

And the Major read on how Jonathan went through the pass, or passage, of Mickmash, between Bozez and Seneh, and climbed the hill dragging his armour-bearer with him until they came to a place high up, about an half acre of land, which a yoke of oxen might plough, and the Philistines who were sleeping awoke, thought they were surrounded by the armies of Saul, and fled in disorder, and 'the multitude melted away.' Saul then attacked with his whole army. It was a great victory for him: his first against the Philistines and 'so the Lord saved Israel that day, and the battle passed over unto Beth-aven.'

The Brigade Major thought to himself: 'This pass, these two rocky head lands and flat piece of ground are probably still here; very little has changed in Palestine throughout the centuries,' and he woke the Brigadier. Together they read the story again. Then the General sent out scouts, who came back and reported finding the pass, thinly held by Turks, with rocky crags on either side, obviously Bozez and Seneh; whilst in the distance, high up in Mickmash the moonlight was shining on a flat piece of ground just about big enough for a team to plough.

The General decided there and then to change the plan of attack and instead of the whole brigade, one company of infantry alone advanced at dead of night along the pass of Mickmash. A few Turks met were silently dealt with. We passed between Bozez and Seneh, climbed the hill-side and just before dawn, found ourselves on the flat piece of ground. The Turks who were sleeping awoke, thought they were surrounded by the armies of Allenby and fled in disorder.

"We killed or captured every Turk that night in Micklash; so that after thousands of years, the tactics of Saul and Jonathan were repeated with success by a British force."*

On reading the above an experienced soldier remarked: "Jonathan's tactics suited the ground in 1000 B. C. and still suited the ground 3,000 years later. All great tacticians think alike in regard to the use of ground."

If it be objected that the views expressed in this paper smack too much of the "die-hard," and take too little account of the play of the imagination as directed to the problem of the future, the answer is this. What is meant by "the war of the future?" A war in which the contending armies shall be wholly or for the most part mechanized? That may be Utopian, and it is certainly possible, though financial, economic, and geographical considerations all hinder the speedy attainment of such an ideal. But soldiers are more concerned with the war of to-morrow than with the war of the future. Their chief business is to make the men, material and armament available at any given time into as efficient an instrument of war as is possible. In peace the chiefs of the army are responsible for squeezing a sufficiency of money from the government to enable them to keep that instrument up to date. In war they must be prepared to take advantage of loosened purse strings; they must be able to employ, in accordance with the "immutable principles," such new armament as the quicker development of war provides and to make such adaptations as novel conditions may demand. Napoleon's armament was not that of Cæsar but his tactics were based on Cæsar's.† And in the next war we may hope that our tactical methods will be based on the lessons of the past rather than on the latest untried theories of fumbling in the dark.

In conclusion consider the following extracts from our training manuals. First as to subordinate leaders in particular:—

"A cut-and-dried method is useful to impress a normal formation on the minds of a class, but the real difficulty is to teach principles, which will lead a Commander to adapt a normal distribution to one which will suit the particular situation, and which will assist a Commander to make and carry into execution a plan of action."—

(NOTES.—On Elementary Tactical Training 1923, para. 3).

* "The Romance of the Last Crusade," p. 183 "Warfare," pp. 5, 6, 7.

† "British Light Infantry in the Eighteenth Century", p. 66 Col. J. F. C. Fuller, D. S. O.

".....recent experience has shown that the increased decentralization of command necessitated by the power of modern weapons calls ever for increased initiative on the part of subordinate leaders, and increased tactical knowledge on the part of all ranks." —(Machine Gun Training 1921, Section 3, para. 2).

Now in peace we do not compete with other nations as to the size of our army. We aim rather at maintaining an imperial police in the shape of a small but highly-trained army, which shall serve as the nucleus around which to develop a national army in time of war. It is therefore to the personnel of that nucleus that we must look for the spreading of our military doctrine amongst the expanded national army. Further, since the time to train that army will be short, it is above all essential that all ranks of the nucleus should know the principles and be expert in their application, for from them many of the trainers and subordinate leaders of the national army will be chosen.

Secondly as to officers in general :—

"The army will be trained in peace and led in war in accordance with the doctrine contained in this volume. The principles of this doctrine should be so thoroughly impressed on the mind of every commander that, whenever he has to come to a decision in the field, he will give them their full weight."—(F. S. R. Vol., II, 1924, Section 1, para. 1).

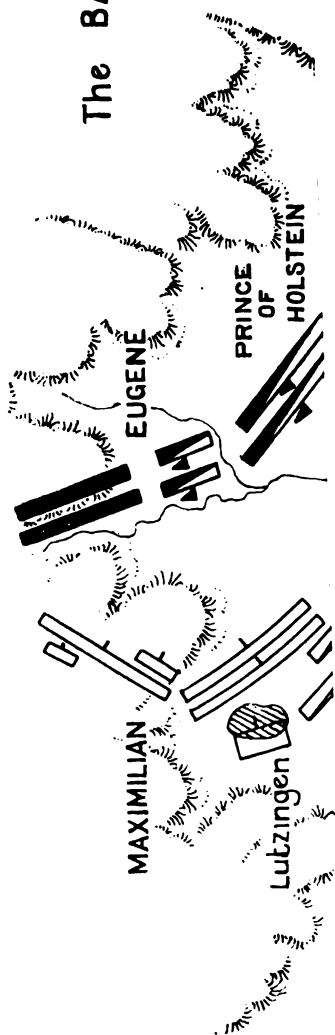
"No fixed and unvarying rules can be laid down for the handling of troops in war. The conditions of battle vary in every case according to the climate and time of year, the strength, armament, physical condition and fighting spirit of the opposite forces, and the objects which they wish to achieve. There are nevertheless certain guiding principles, as set forth in Field Service Regulations, Vol. II, which experience has proved to be essential to victory.

"The aim of our system of training must be to teach the officers and N. C. Os. who will lead the infantry in battle how to apply these principles, and so to imbue each leader with them that in the heat of action he will instinctively apply them in the right way.—(Infantry Training, Vol. II, 1921, Section I, para. 2).

“Training in the art of command should aim primarily at giving a thorough understanding of the principles of war, and, by practice in their application to concrete cases, both with and without troops, to produce in commanders of every grade throughout the army a sound and uniform method of approaching military problems, and a faculty for instinctively applying the principles of war correctly in solving them.”—(Training and Manceuvre Regulations, 1923, Section 1, para. 5).

The emphasis is on the recurrent note of ability to apply the principles instinctively, that is, the officer should aim to become an artist, a master of the art of war. This instinctive ability, the mark of the artist and the master, can be gained only by assiduous practice. Wherever one is stationed, practice is limited by the nature of the surrounding terrain and the troops available. But military history affords an endless variety with which to surmount this limitation. Just as the master pianist or the master painter has freed his mind for concentration on the big thing—the interpretation of a fugue or the portrayal of a noble idea—by a mastery of technique gained by constant practice, so the soldier, having thoroughly steeped his mind in the application of the principles by practice in a variety of cases, is free to concentrate on the problems which actual war presents and need waste no mental energy on lengthy processes of ratiocination, for these will be performed automatically, that is to say, the principles will be applied instinctively. The object of practice is ultimately, in crises, to economize mental and physical force, and no art makes such great demands on mental and physical energy as the art of war. The study of military history not only affords mental practice but also furnishes material for a background of verisimilitude for schemes and exercises.

PLAN I. The BATTLE of BLENHEIM



PLAN II.
The BATTLE of RAMILLIES



French
Allies

THE BATTLES NORTH OF BAGHDAD IN APRIL 1917.

By

BREVET LIEUT.-COLONEL H. E. CROCKER, C.M.G., D.S.O.

Early in 1917 the situation, North of Baghdad was briefly as follows :—

The Turks had fallen back across the Great Marl Plain, and were holding the line of the ADHAIM River. They also had a considerable force on the Persian frontier beyond KIZIL ROBAT, which was watched by a Russian Army. The British XIII Division (New Army) moved up towards the ADHAIM, and the 40th Infantry Brigade had orders to cross the river by night, close to its junction with the TIGRIS. The actual task of forcing a passage over the river, and securing a bridgehead on the far bank, was entrusted to the 8th Cheshire Regiment and the 6th Royal Welch Fusiliers, under the command of the O. C., the 8th Cheshire Regiment. The OLD NARWAN CANAL, here about 60 feet deep, afforded an excellent covered line of approach, and careful reconnaissances were carried out by day and night. The day previous to that fixed for the actual crossing, orders were received to stand fast, and that night the Division marched back in three parallel columns across the Great Marl Plain, to a point on the TAWILA Canal, some little way below DELI ABBAS, where they arrived about 7 a.m.

What had happened was this :—

The Russian forces in PERSIA, which had been guarding the British right flank, had suddenly become imbued with Bolshevik doctrines. The soldiers' committees had decided against fighting, and the whole force had moved off into PERSIA, burning and looting wherever they went.

This set free two Turkish Divisions on the frontier, whose Commander took immediate advantage of this opportunity of striking at the unprotected British flank. They advanced accordingly through the JEBEL HAMRIN, and threatened BAGHDAD itself. Hence the necessity for the immediate recall of the XIII Division.

So much for the General Situation. An Officer of the 8th Cheshire Regiment, 40th Infantry Brigade, will now continue the narrative.

I. THE BATTLE OF DELI ABBAS, 11TH APRIL 1917.

The 40th Brigade halted about 7 a.m., and we had breakfast and filled our water-bottles, by the mercy of Heaven, as it turned out. About 8 o'clock we had orders to advance in Artillery formation; with the 8th Royal Welch Fusiliers on our left, to occupy a slight rise directly to our front, they with their right, and we with our left, directed on a little mound. (See Sketch "A").

We were told that the Turks were retiring, and that we were merely to dig in, and not to come into action. Shortly after we started, the Brigade Commander rode up, and told our C. O. to take the Battalion to a line of some small mounds further to the right than the original objective. He was to gallop on himself and reconnoitre, and to take his Company Commanders with him.

The Battalion thereupon was ordered to change direction half-right, and the mounted Officers rode on in advance with the C. O. We passed a Battery in action—I forget the number—and almost immediately afterwards we encountered several Troops of Indian Cavalry trotting back in our direction. In reply to our questions as to the situation in front, they informed us, to our amazement, that, so far from retiring, the Turks were advancing in large numbers. Just at this time, we came under rifle-fire, and the C. O. was knocked off his horse by a bullet through the shoulder, which, however, did no damage to speak of. We went on on foot, and, as we topped a slight rise, we could see long lines of Turks coming on straight at us, greatly magnified in the mirage. Here, now, was an entirely unexpected situation. If the Battalion continued on its course, it must inevitably be attacked in flank, by the advancing masses of the Turks.

The C. O. decided that this course of action was impossible in the circumstances. Realising that every second was of importance, he determined to try and reach the rising ground and thus forestal the Turks, who, probably, were unaware of our approach. It was a risk, of course, and it involved disobeying his orders, but he had to decide for himself. The Brigade Commander was not on the spot, and there was, as yet, no communication to Brigade Headquarters. There was a sporting chance of success and he took it.

The Battalion changed direction half-left, and as the leading Platoon gained the rise, the Turks were about 400 yards away. The "mad minute" opened all along the line, as fresh Platoons were

hurried up, and the advance of the Turks was checked for the moment, but the situation was still critical. Control within the Battalion was difficult owing to their extended formation. A few Platoons of the two Supporting Companies were unavoidably drawn into the firing line, but the rest of these Companies was retained as a Battalion Reserve.

Shortly afterwards the attack was renewed, and one reserve company was pushed up by Platoons to fill gaps. Again the rush was stayed, and the Turks, wearying of frontal attacks, poured in a solid mass round our right flank, and tried to envelope us in that direction. The Supporting Platoon of the Right Company was hurriedly brought into action, and checked the impetus of the attack momentarily, while a counter-attack by the 4th Company stopped the Turks at the point of the bayonet, and restored the situation. (Sketch "B.")

Battalion Headquarters, signallers and odds and ends were then formed into a reserve.

By this time a party of signallers from the Brigade Signal Section had come up and established telephone communication with Brigade Headquarters, and we were able to report the situation. Shortly afterwards a sub-section of the Machine-gun Company turned up to our great relief, and was posted on our right flank.

The Turks' attacks had now ceased, but all day long we lay out on that plain under heavy rifle and machine-gun fire in the broiling sun, plagued by a swarm of locust, and absolutely without protection save what we could dig with our entrenching tools, which amply proved their value on that, and many another occasion. No movement of any kind was possible until nightfall, and the men had to exist on the contents of their water-bottles and haversack rations. The water party, with the mules, lost their way in the dark, and did not arrive until early the next morning.

We were greatly harrassed by a group of machine-guns away to our right front. They did remarkably accurate shooting, and accounted for a good many casualties. We were able, finally, to get the Battery on to this nuisance, and stop it. The difficulty of directing fire was accentuated by the fact that the country, being devoid of any natural landmark, made it impossible to give a reference point, while our complete ignorance as to our own and the Battery's position on the map, added to the difficulty. We could spot the place where

we thought the machine-guns were—about 1,000 yards to our right front—so we asked the Battery Commander to fire a round of H. E., anywhere, and would he very kindly cock his gun well up, so as to avoid any risk of the shell landing among us. The first shell landed, as near as we could judge, 1,200 yards away on a bearing of 45 degrees. The second fell more to the right. By plotting these results on the bearings we gave him, the Battery Commander was able to fix, approximately, our position. Having done that, we told him that the machine-guns were 1,000 yards from us on a bearing of 87. We then corrected his fire until he seemed to get pretty close to the target. He then put down two rounds gun-fire, which evidently did the trick, as the machine-guns ceased firing.

During the night the Turks fell back to the JEBEL HAMRIN, and we followed them up as far as DELI ABBAS. On our way the next morning, we came across the position occupied by the machine-guns which had given us so much trouble. There were 4 holes in the ground, each with a great pile of empties close by, while all around were craters from our shells.

After a few days we moved back to the ADHAIM, which we crossed without much difficulty. The entire III Corps, less certain units, moved up the river towards the JEBEL HAMRIN, where a large Turkish force was in position.

II. THE BATTLE OF THE BOOT.

(SEE SKETCH).

The Turks, towards the end of April, were holding a strong position astride the ADHAIM, which, at this season of the year, had shrunk to a series of stagnant pools, strongly impregnated with salt. The river bed lay between precipitous mud banks of considerable height above water level. In the centre of the river rose a large mound, closely resembling a boot, which gave its name to the battle. It was the key to the position, and was strongly held.

The XIII Division was on the left bank, and the XIV on the right. The Turks' position was to be attacked in a few days time.

The Officer of the Cheshire Regiment shall now be allowed to continue his story.

The 40th Brigade was on the left bank of the ADHAIM, and our Battalion was holding an outpost line, with our left on the river.

The attack was to start at 5 a.m. on the following morning, 4th-24th Regiment on the right, 8th Cheshires on the left, 5th Wilts support, and 8th Royal Welch Fusiliers Reserve. Our objectives were some lines of trenches and rifle pits about 1,200 yards to our front, with their right resting on a village on the edge of the cliff overhanging the river. In rear of this village was a Turkish Field Battery.

At the same time the XIV Division was to assault the BOOT.

Our orders were to form up for attack, with our left on the river bank, but thanks to a personal reconnaissance the previous day, we discovered that any advance along the bank would be held up by a crevasse which ran for some distance inland, at right angles to the river. We accordingly had to form up at a point whence our left could march direct on the village, allowing sufficient margin for it to clear the crevasse. This involved forming up on a line obliquely to our front—no easy matter in the dark. (See Sketch "C").

The next morning after a weird breakfast of biscuits and pilchards at about 3 a. m., we took up our position. The attack started at 5 o'clock, and we at once came under heavy rifle and machine-gun fire, which caused a certain amount of casualties. The C. O. was severely wounded, and the acting Adjutant killed before they had gone far. The Turkish Artillery was firing, but as usual, they burst their shrapnel very high, and did no damage. Aided by a Section of the Machine Gun Company on our left, we pressed forward, and occupied the front line without difficulty. We then had a stiff fight for the village and the second line of trenches, which were captured by a bayonet charge. As previously arranged, this line was consolidated by the two leading companies, while the two support companies pushed through and attacked a third line, and a battery of 8 guns in rear of the village. After a stiff fight the battery was captured, and altogether about 1,500 Turks.

The 4th-24th Regiment had also reached their objectives, and all was well.

Now, however, occurred one of those set-backs which Dame Fortune loves to mingle with her favours, like the powder in the jam, and against which no man can prevail. A sudden dust storm arose from the direction of the Turks' position blowing straight in our men's faces, and obscuring all vision beyond a few yards. The Turkish Commander, deeming that the day was lost, had ordered a

retreat. The Commander of the Reserves, a Division of about 5,000 men, had actually set his troops in motion, when the dust-storm burst over the land. Recognising the dust-storm as a special mark of the favour of Heaven, he seized the opportunity of a life-time, and turned his retreat into a spirited counter-attack. Our men saw nothing until the leading wave broke upon them. Taken by surprise, they were back, until they rallied on the line of trenches which had been consolidated. Unfortunately, however, the Battery and a large number of the prisoners were recaptured, and two Officers and about 40 other ranks taken prisoners. Even then, the prisoners which had already been sent in greatly out-numbered the strength of the Battalion. After this battle, the strength of the Battalion was 4 Officers and about 70 men, many wounded. The Turks, having shot their bolt, drew off under cover of the dust-storm into the JEBEL HAMRIN, and we went into summer quarters on the TIGRIS, above BAGHDAD.

Fighting was over : the close season had begun.

CONCLUSION !

From these two engagements we may glean some points of interest which confirm in a striking degree the principles enunciated in Field Service Regulations.

They may be summarised, briefly, as follows :—

I. RECONNAISSANCE.—On the 11th April there was no reconnaissance. Neither we nor the Turks had any idea of the near approach of the other. On the 30th April the personal reconnaissance of the O. C., 8th Cheshires, detected the crevasse which would have seriously disorganised the advance of the Battalion.

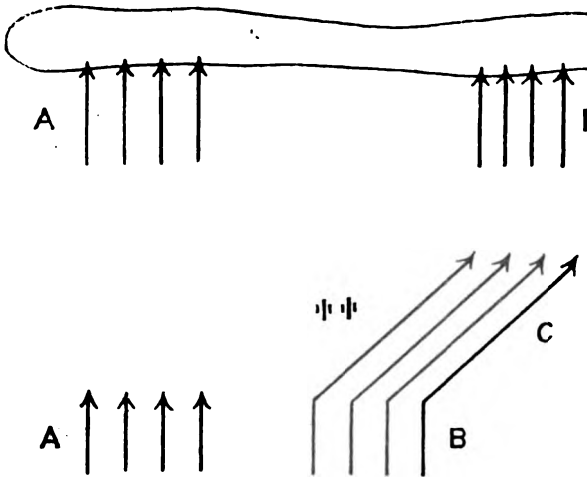
II. CONSOLIDATION.—On the 30th April the Companies of the 8th Cheshires, which had consolidated the captured position, were able to stem the counter-attack, while those which omitted to do so were swept out of existence.

III. SUPPORT.—On the 30th April the supporting Battalion did not assist the leading Battalions.

IV. COUNTER-ATTACKS.—On the 11th April the counter-attack by the Reserve Company of the Cheshires stopped the flank attack of the Turks. On the 30th April the counter-attack of the Turkish reserves snatched victory from defeat at the last moment.

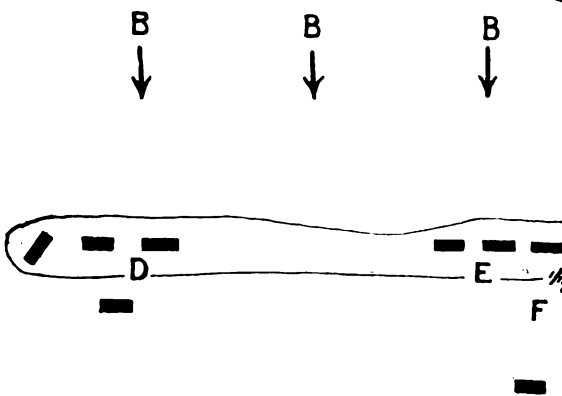
V.—SURPRISE.—On the 11th April both sides were taken by surprise. On the 30th April the Turkish counter-attack took the leading British units completely by surprise.

SKETCH "A"

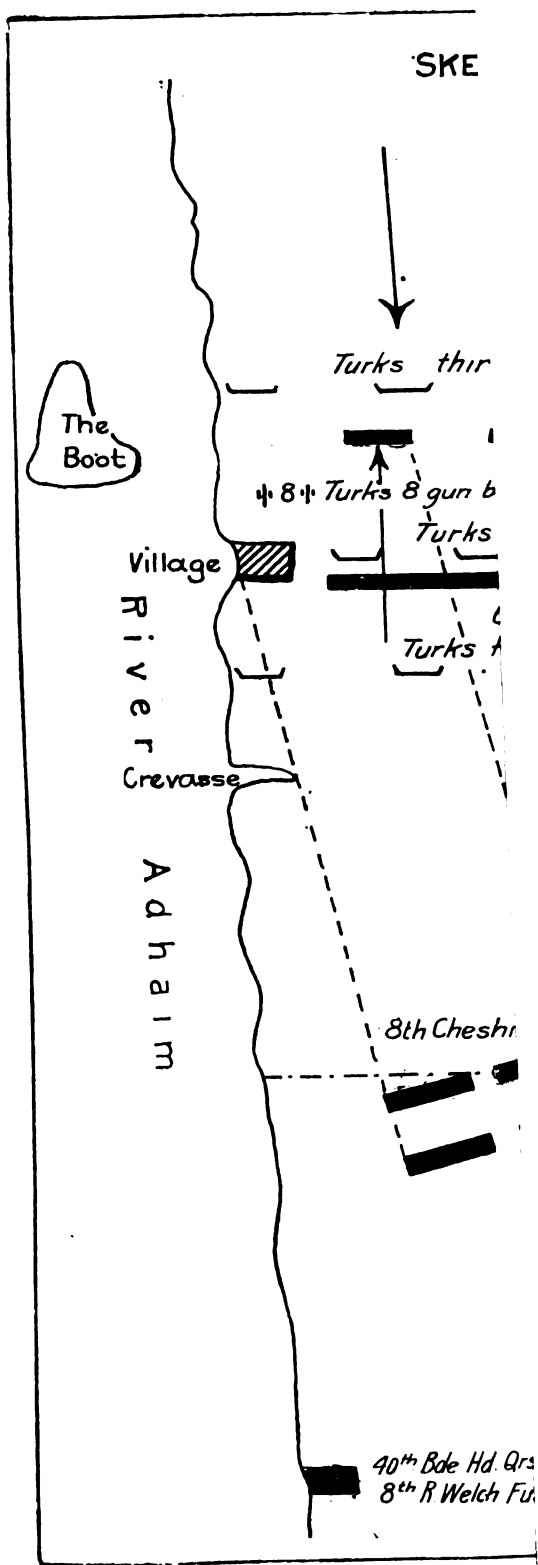


- A A Royal Welch Fusiliers
- B 8th. Cheshire Regt. at the start
- C 8th. Cheshire Regt after changing dir
mounds YZ
- D 8th. Cheshire Regt Final position after
forestall the Turks on the ridge

SKETCH "B"



- A Turkish machine guns
- B, B, B Turks
- C Turks attack against Cheshire's rig
- D Royal Welch Fusiliers
- E 8th. Ches
- F Subsection machine guns
- G Reserve coy. sent up to repel Turks fr
- H Cheshires Battn. Hd. Qrs.



MILITARY NOTES.

(REPRODUCED BY PERMISSION OF THE GENERAL STAFF.)

I.—FRANCE.

The re-organization of the French Army and the proposed reduction of the period of military training.

1. In an official *communiqué* recently issued by M. Painleve, the War Minister stated that :—

- (a) In future the Home Service and Overseas Forces will be quite distinct.
- (b) The Colonial Army will number 277,000 of which 97,000 will be white troops.
- (c) White units attached to Provisional Active Service organizations and the White Cadres forming part of all Native regiments will be entirely composed of re-engaged men or volunteers.
- (d) The existing 32 divisions are to be reduced to 20.
- (e) The present system of extra-regimental employment by which recruits with 6 months' service are taken for police, dépôt, office, garrison and domestic duties will cease, the recruits being replaced by 14,000 specially engaged civilians (personnel civil), and 15,000 specially engaged men (agents militaires) for work in the proposed "Centres de Mobilization."
- (f) In addition to the last mentioned 29,000 civilians, it is hoped to obtain another 29,000 re-engaged non-commissioned officers and men to strengthen the regimental cadres and corps of instructors, bringing their total to 105,000.
- (g) It is hoped that it will be possible to call up the whole of the recruits of a battalion together and to keep them together throughout their period of service under the same officers and non-commissioned officers, both active and reserve, whom they had known and by whom they had been taught during their first period of training.

- (h) It is intended to return to the 21 years of age rule for recruits, chiefly in the interest of corps in which a technical training is required.

The 1929 class, to be called up in 1930, will be the first to do the 12 months' training at the age of 21 and will be called to the colours one-third at a time, instead of half at a time, as at present.

- (i) The reorganization scheme will cost 522 million francs, of which 255 millions will be obtained from the proposed shortening by 6 months of the present period of training, and 65 millions from the reduction of establishments and other economies to be carried out in the Cavalry and Artillery services.
- (j) The Army Budget will therefore have to be increased by over 200 million francs to meet the increased expenses due to the reorganisation and reduced period of service.
- (k) The "Centres de Mobilization" already mentioned will actually be formed and will be served by the 15,000 "agents militaires."

2. From Monsieur Painlevé's statement, it will be seen that the new scheme depends entirely on the recruiting of a sufficient number of re-engaged N.-C. Os. and men and civil employees, but, unless the pay and conditions of service are made more attractive and therefore more costly there is little prospect of the required numbers (58,000) being obtained.

The question of increasing the gendarmerie by 60,000 has apparently been dropped for the moment, although the recruits at present employed on police and maintenance of public order will eventually have to be replaced by gendarmerie.

During the transition period, 1926-1929, a 16 months' period of training will be adopted, and the age of each contingent of recruits will be gradually increased till the standard of 21 years is attained.

II.—GERMANY.

CHEMICAL WEAPONS IN THE WAR OF THE FUTURE.

An interesting article under this heading is published in "Wissen und Wehr" (3rd Volume, 1926), by Dr. Rudolf Hanslian, part author of the well-known book "Der-Chemische Krieg."

The article is divided into five sections, namely :—

- (i) Introduction.
- (ii) Chemical Weapons.
- (iii) Methods of Employment of Gas.
- (iv) Anti-Gas Methods.
- (v) Relative Value of the Chemical as compared with other Weapons.

The author takes as the basis of his discussion the thesis that, in the next war, the employment of gas will not be limited in any way in spite of international conventions, such as the Washington Agreement. All the Great Powers with the exception of disarmed Germany are, he says, conducting experiments on a scale to justify this assumption. It is in Germany's interest to study the question of chemical warfare, not with a view to a rapid adoption of a military-chemical policy, but rather to ensure that, when the situation demands it, she will be well abreast of developments in other countries and in a position to profit by her research.

Post-war research and experiments throughout the world have shown that, of more than 1,000 new gases which have been tested, none have so far proved to be essentially more efficacious than those employed in the late war. The much quoted American "Lewisite" is really a German war production, which has, however, never been employed. Hanslian is of the opinion that, in the next war, the same general types of gas will be employed as were used during the late war (*i. e.*, mustard, lachrymatory and sneezing), although their effects may possibly be intensified by interim research.

Unless a revolutionary improvement on phosgene is recorded, purely lethal gases will probably be abandoned as an obsolete weapon, as a charcoal filter is sufficient protection against these.

The gases of the future will be primarily directed against the eyes and skin of the enemy, and only secondarily against the respiratory organs.

As regards methods of employment of gas, the writer maintains that projection from containers or propulsion of gas-cylinders are obsolete methods, and could only be adopted in a future conflict were it to develop into regular trench warfare. He condemns these methods as clumsy and dangerous.

He then discussed the respective merits of aircraft and artillery as gas and smoke "projectors." In the course of a detailed discussion he quotes the chief advantages and disadvantages attaching to the two arms. These may be summarised thus:—

ADVANTAGES.

| <i>Aircraft.</i> | <i>Artillery.</i> |
|--|--|
| (i) Long range (includes enemy civil population). | (i) Variability of firing position for each target. |
| (ii) Possibility of carrying thin metal or glass containers (bombs) and thus increasing relative weight of gas to container. | (ii) Possibility of concealment from enemy retaliation. |
| (iii) Feasibility of sprinkling large areas with liquid from container in the aeroplane. | (iii) The gun can fire more than ten times the quantity of gas, over a given period, than the aeroplane. |
| (iv) Efficiency in laying smoke screens. | |

DISADVANTAGES.

| <i>Aircraft.</i> | <i>Artillery.</i> |
|---|---|
| (i) Only one "firing" position for each target (<i>i. e.</i> , immediately above) and consequent impossibility of concealment. | (i) Excessive weight of projectile compared to amount of gas contained in it. |
| (ii) Extreme vulnerability of the bombing machine to hostile air attack. | (ii) Short range. |
| (iii) Necessity of low flying to achieve good "sprinkling" effect and consequent vulnerability from the ground. | (iii) No accurate sprinkling effect. |

The writer comes to the conclusion that under present circumstances the aeroplane must be considered to be the most effective gas "projector," and that it so far represents the last word in methods of gas attack.

Hanslian fully subscribes to the dictum that gas is a humane weapon, in view of the fact that protective measures can easily be adopted.

Both the soldier and the civilian will in the next war demand a complete protective effect from their anti-gas apparatus. The civilian will, however, be content with complete protection alone, whereas the soldier will also demand that his protective apparatus should permit him to remain in action. In the late war the soldier's demand was almost completely fulfilled, although prolonged fighting in gas masks certainly placed a considerable strain on him. The next war will, however, require not only the protection of face and respiratory organs, but also of the entire surface of the body. American experiments with "Impregnite" have shown that this protection is possible, and it is only a matter of time before the soldier can be entirely clothed in gas-proof material which will afford complete protection over long periods. The old problem of "gas *versus* mask" is rapidly becoming "gas *versus* gas-suit."

The first gas attack of the next war will probably be launched against a gas-proof enemy, who will be doubtless incommoded, but not put out of action by it.

No power on earth can logically prevent Germany from taking these essential anti-gas precautions.

In conclusion, the writer discussed the relative value of gas as compared with other weapons. The greatest weakness of gas is its dependence on the weather. Rain and snow neutralise the effect of mustard gases, and a light wind makes any effective concentration of other gases impossible. Although himself a leading gas expert, he admits that the time has not yet come for gas to displace high explosive. The two substances are supplementary. Gas is not therefore to be regarded as the chief weapon in a future war, but will nevertheless undoubtedly be one of the chief weapons.

III.—SWITZERLAND.

NOTES OF MILITARY INTEREST.

Military Expenditure.

The Budget of the Military Department for 1925 amounted to 84,990,653 francs, plus a supplementary credit of 1,806,740 francs due to that portion of the expenses of reorganization allotted to the

year 1925. The total expenses of the military reorganization are estimated to amount to £1,250,000 in ten yearly payments.

The estimated expenditure for 1926 shows an increase on the 1925 figures; the following table indicating the expenditure for the two years by the various sections of the military department:—

| | | | 1925. | 1926. |
|---------------------------|----|----|----------------|----------------|
| | | | <i>francs.</i> | <i>francs.</i> |
| I.—Central Administration | .. | .. | 2,783,924 | 2,927,667 |
| II.—Instruction | .. | .. | 50,292,389 | 51,118,851 |
| III.—Equipment | .. | .. | 19,315,158 | 21,198,332 |
| IV.—Horses | .. | .. | 7,220,583 | 6,989,281 |
| V.—Fortifications | .. | .. | 1,885,948 | 1,824,800 |
| VI.—Communications | .. | .. | 3,491,651 | 3,740,019 |
| Total | | | 81,989,653 | 87,798,950 |
| Supplementary expenditure | | | 1,860,740 | .. |
| Grand Total | | | 86,850,393 | 87,798,950 |

Increase for 1926 948,557 francs.

This increase in expenditure is caused by:—

- (i) An additional expenditure of 550,000 francs on the training of the Elite owing to an increase this year of nearly 4,000.
- (ii) A repetition course for the Landwehr infantry will take place this year, affecting 14,000 men and costing roughly 992,000 francs.
- (iii) Replacement of worn out equipment, and larger issues owing to the increase in the number of recruits.

Military opinion.

The attitude of the Swiss people and their military hierarchy, remains unchanged as regards the retention and development of the National Army. This is conclusively shown by the extreme facility with which credits are obtained for increased military expenditure, and for the introduction of modern armament and equipment.

As in 1924, the dazzling vistas of universal disarmament propounded at Geneva are regarded with mistrust. The Swiss have no intention of abandoning the defence, by arms, if necessary of their hearths and homes. Nor do they consider that the world situation is such as to encourage immediate disarmament for small nations. From a military point of view, the Swiss are now anxious to modernize

their army, which for various reasons is in many ways out of date. To a great extent their present reorganization will have the desired effect, as regards organization. It is also hoped that a complete series of new training manuals will be issued in 1926 and 1927, which will in due course modernize training. The General Staff is working on these, taking the existing French, British and German issues as a standard to build on. The Swiss, being a practical race, are bent on picking all the best bits out of the regulations of the larger nations with experience of modern war.

Moral of the Army.

The excellent spirit and moral of the army remains unchanged, and the idea of civic duty is highly developed. Anti-militarist pamphlets were distributed on a small scale in the 1st Army Corps area in the spring training season, 1925, but without any successful results.

The various officers, non-commissioned officers, and other military societies have taken a great spurt during 1925, the meetings being well attended and fully reported. These excellent institutions play a great part, especially morally, in the Swiss military life, and develop comradeship and patriotism.

Death of General Wille.

General Ulrich Wille, who commanded the Swiss Army during mobilization, 1914-1918, died in January 1925. He was distinguished for his extreme pro-German tendencies and for his military ability, which was considerable.

The Staff.

The reorganization of the Swiss Staff is proceeding slowly. Its existing form is on the German system, but antiquated, and it does not work out favourably in practice. The reorganization is largely in the hands of Colonel Combe, the Chief of the Intelligence Branch, who is quite able to evolve a better system.

Armament.

As regards armament, no immediate changes are likely for financial reasons, over and above the issue of the "Furrer" fusil, mitrailleur, issue of which begins this year (1926). There are, however, distinct indications of a fairly early rearmament with a specially designed howitzer of "Skoda" design. The present reorganization should be, and doubtless will be, completed by 1929.

Fortress Artillery.

The bulk of the fortress artillery has, under the reorganization, been mechanized for use as heavy artillery with the field troops. There are still, however 25 companies of fortress artillery.

Transport.

One of the main features of the reorganization is the assimilation of all regimental transport and most train vehicles to the needs of mountain warfare. All animals not ridden now carry a pack, and every unit in a division contains a percentage of mountain transport vehicles. The latter are excellent for the purpose they are intended to serve. The pack animals are also excellent and the method of loading exemplary. It may be said that a shifting load or a sore back, even in intricate mountain country, are practically unknown.

General Remarks.

Finally, it may be stated that the Swiss Army is in a healthy condition, and that its personnel is as patriotic and well disciplined as ever. It is increasing in numbers up to its pre-war strength, and is being brought up to date in armament and training to such a pitch as is necessary, or as such a small country can afford.

IV. CHINA.

THE SITUATION, 30TH APRIL, 1926.

1. *Civil War.*

The month of April closes with the armies of the "anti-red" allies, Marshals Wu Peifu and Chang Tso Ling, stationed round Peking, which was evacuated by "red" troops between 15th April and 19th April. There was very little fighting. Peking itself was bombed by aircraft presumably belonging to Chang's Army, but relatively little damage was incurred.

The "red" troops retired north-west from Peking along the railway to Kalgan, and the bulk of the "red" army is now disposed between Kalgan and the Nankow Pass, the latter being a feature of some tactical importance about 25 miles north-west of Peking. Chang has moved a considerable force, led by his White Russian armoured train, round Peking to follow up the retreating "reds" and to secure Peking against a counter-move.

The military position in the north is, therefore, as follows :—

(a) “ *Red* ” Army—

1st National Army and remnants of 2nd and 3rd National Armies (total strength about 75,000) distributed between Kalgan and Nankow, with 30,000 holding the Nankow Pass.

(b) “ *Anti-Red* ” Allied Armies—

Chang has 40,000 men in the outskirts of Peking and at Jehol. A further force of 30,000 has been detached in the direction of the Nankow Pass.

Wu is represented in the Peking area by a force of some 30,000 men.

The main body of his army (strength 60,000) is still in the Hankow area and in the Valley of the Yangtze. He has detached 30,000 to watch Hunan Province.

Li holds Tientsin with approximately 35,000 men.

Chang-tsung-Chang’s Shantung army numbers about 30,000 men.

It is of interest that neither *Wu* nor *Chang* has personally entered Peking nor has either allowed his military forces to do so in any large numbers ; the latter point speaks well for the control of the subordinate leaders over their commands. *Wu* is still at Hankow and is doubtless apprehensive that the Canton “ reds ” will endeavour to stir up trouble against him in the Yangtze valley. That *Wu* is fully alive to this danger is shown by the attitude which he is reported to be taking towards the disaffected provinces of Kiangsi and Hunan. Canton was reported to be urging the heads of these provinces to move against Hankow, when *Wu* stepped in and appointed his own nominee to be governor of Kiangsi and at the same time bribed the governor of Hunan not to attack him ; further reports suggest that *Wu* has now ordered the governor of Hunan to lead an expedition against Canton.

There are indications that the “ red ” forces, shepherded by Soviet control, are more likely to retire still further north in the direction of Urga than to attempt a counter-stroke against Peking. As previously pointed out in these notes, the main question as to whether China is about to enter upon a period of comparative respite from civil war hinges upon the stability of the *Wu-Chang* Alliance and its ability to set up a representative coalition government. So

far there are no evident signs of a rupture ; the national party, before evacuating Peking, attempted to come to terms with Wu, and offered him the leadership of the party. But Wu rejected the offer, and reaffirmed his intention of standing by his anti-Bolshevik alliance with Chang.

It has been stated, although unofficially, that the terms of the agreement between Wu and Chang are roughly speaking as follows :—

- (a) A stable central government representative of both Feng-tien (Chang) and Chihli (Wu) parties to be set up in Peking.
- (b) Punitive expeditions to be despatched against the “reds” in Canton as well as Mongolia.
- (c) Governors of Provinces to be nominated equally by both parties.
- (d) The post of Inspector-General of the Three Eastern Provinces (Manchuria) to be restored.
- (e) All private contracts concluded with foreign powers during Tuan's tenure of office to be discounted, as well as secret arrangements contracted between the Kuominchun troops and foreign powers.

2. *The central (Peking) government.*

Marshal Tuan Chi-jui, who has held the post of Provisional Chief Executive since December, 1924, resigned his office and left the capital for Tientsin on 20th April. With his departure even the shadow of a central government in Peking ceased to exist. The Minister for Foreign Affairs has been offered the premiership, but is apparently reluctant to accept.

A note on Tuan Chi-jui appeared in these notes for the month of July, 1925. His anæmic dictatorship lasted 15 months. He took up office at the behest of Chang and Feng, and he acted as a figure-head for them, holding the scales of the conflicting power they wielded. His personal integrity was beyond question, but he had little statesmanship with which to support it : the best that can be said of him is that he endeavoured to use his personal prestige to check and to localize disorder.

3. Canton—Hong-Kong.

Latest reports indicate that there is no immediate prospect of an improvement in the boycott situation; the Canton government is still forced by the strikers to demand strike pay, and negotiations between the governments of Hong Kong and Canton cannot be satisfactorily re-opened until the latter withdraw this basic claim.

Russian influence in Canton is reported to be on the wane and there are signs of growing dissatisfaction with the strike organisation and with labour agitators.

There has evidently been a conflict of opinion between moderates and communists in the Cantonese military forces in which the former have been successful.

An independent witness of events in China during the past year has offered the opinion that could the trade disturbances in China have been avoided, there would be 10,000 fewer unemployed in Great Britain to-day. To this has to be added the capital loss suffered by British merchants along the China coast.

*MONGOLIA.**Soviet Policy in Mongolia.*

Under the caption "Soviet Intrigue in Mongolia," it was pointed out in these notes for October, 1925, that in spite of an open gesture in May, 1924, to the effect that the U. S. S. R. recognized Mongolia as an integral part of the Republic in China, the Soviet Republic was working steadily towards furthering the following ends:—

- (1) The declaration by the Mongolian Government that the country had assumed the status of an independent autonomous republic.
- (2) The constitution of the autonomous republic of Mongolia on Soviet lines and with Soviet assistance.
- (3) The consolidation in Mongolia of Soviet commercial, political, and social interests.

In other words, Soviet Russia aims at the gradual absorption of Mongolia into the Union of Soviet Socialist Republics.

It is not easy at first sight to see how Soviet progress in a country so far removed from British territory can seriously affect British

interests. However, the extent to which the anti-British boycotts and outbreaks in China during the past 12 months have been supported if not actually instigated—by Soviet emissaries and Soviet money is proof enough, when it is realized that a wholesale attempt has been made to ruin British trade in China. Mongolia has served as the main channel for this Soviet effort. As has been pointed out previously in these pages British trade in China amounts in the average year to about 130 million pounds sterling—a valuable item.

However, uncertain may be the future of China generally, and of British trade interests in China in particular, one fact stands out clearly, namely, that up to the present the Soviet have failed in their attack on British trade. It is true that they have achieved a partial success in Canton and Swatow where British trade is not accepted. But elsewhere in China the boycott on British goods has been removed and the attitude of Canton is looked upon with lessening sympathy.

More important still is the fact that there has been a sharp and universal set-back to Soviet aspirations and Soviet efforts in China—so much so that the present civil war in China is now being fought out on an anti-Soviet issue with the anti-Soviet alliance pronounced ascendancy.

There is every evidence that Moscow is well aware of the set-back which her activities have sustained, and has accordingly modified her policy for the immediate future. Every effort is to be made to consolidate Soviet influence in Mongolia. With this accomplished, the offensive against the British Empire may be renewed, either by striking once again at British prestige and British trade in China, or by striking southwards through Sinkiang and Tibet towards British India with a view to fostering anti-British unrest there. The physical barrier of the Himalaya Mountains has not proved impassable to Soviet agitators.

Soviet Military Organizations in Mongolia.

The purely military effort by the Soviet in Mongolia may be considered under two heads :—

- (a) The organization and training of the Mongolian army as a Soviet weapon.
- (b) The stationing of Soviet units and formations in—or in close support of—Mongolia.

(a) *The Mongolian army.*—The Mongolian army is to consist of—

36,000 mounted infantry (organized in about 120 squadrons),
10,000 infantry (organized as 9 battalions),
108 field guns (organized as 27 batteries).

(i) *Mounted Infantry.*

There are to be three “cavalry” divisions—

1 division=3 brigades,
1 brigade=3 regiments,
1 regiment=4—6 squadrons.

The men are armed with Russian rifles of various types, furnished from surplus war stock. Each regiment will have—

1 M. G. detachment,
1 engineer detachment,
1 signal section.

Each squadron will have—

2 light automatics (pack).

Note—A report, dated April 1926, indicated that instead of three cavalry divisions the Soviet now propose that Mongolia should have one cavalry division and two infantry divisions; the latter trained and organized as Soviet rifle division.

(ii) *Infantry.*

Pending a decision regarding the infantry divisions mentioned in the foregoing note, there is to be one infantry brigade of three regiments—

1 infantry regiment=3 battalions,
1 battalion=3 companies.

Each infantry regiment will have 1 M. G. platoon.

(iii) *Artillery.*

There are to be three divisions of artillery—

1 artillery division=3 artillery brigades,
1 artillery brigade=3 batteries,
1 battery=4 guns.

The armament is being supplied as a gift from the Soviet Republic. So far the guns and equipment for two artillery brigades (24 guns) have arrived, together with a considerable amount of ammunition. The establishment of each artillery division includes a chemical company (150 strong) for filling gas shell.

(iv) Air Force.

The establishment of the Mongolian air force is believed to be two squadrons each of eight machines. So far, only three D. H. 4's and one Junker monoplane are believed to have arrived at the main aviation centre at Urga.

(v) Command and Staff.

The Headquarters of the Mongolian army is at Urga. All important commands and staff appointments are filled with Soviet personnel, and the total number of Soviet instructors (including Soviet trained Mongols and Buriats) amounted in November, 1925, to 5,630.

(b) Soviet troops in or near Mongolia.

It is not known exactly how many Soviet units are actually stationed in Mongolia. It seems clear, however, that there are some Soviet units stationed there and that they are to be retained in the country at the request of Mongolian Government officials.

Moreover, it is reported that the Soviet Government have agreed to station one infantry division and two cavalry brigades on the Mongolian frontier.

These dispositions indicate that Mongolia, acting under pressure from Moscow will not be long in making her declaration of independence, and that Moscow is prepared to afford some military guarantee against consequent armed force action on the part of the Chinese.

V. CZECHOSLOVAKIA.

NOTES OF MILITARY INTEREST.

General Note.

During the year 1925 the Czechoslovak army has continued to improve in training and equipment, and from the purely technical point of view may be said to have reached a high standard of efficiency. On the other hand, the long promised amelioration in the pay and conditions of service of the regular officers and warrant officers is still delayed, and the resultant dissatisfaction in the permanent staff of the army has done little to heal the breach between the Legionaries and the ex-Austrians.

Strength of the Army and the Budget.

The law ordaining a period of 18 months of compulsory military service remained in force throughout the year. Under this, the active army had a strength of about 150,000 all ranks from 1st January to 31st March, 90,000 from 1st April to 30th September and again 150,000 from 1st October to 31st December. The depleted effectives during the summer months were brought up to a higher establishment by the calling up of some 250,000 reservists for periods of 14 days or 1 month. The same law will remain in force for 1926, although the new government has promised to reduce the term of colour service after the introduction of a scheme for the compulsory military training of young men between the ages of 18 and 20 years, before their conscription.

The budget for 1926, which was produced by the late government before the election, provided for practically the same number of permanent staff as in 1925 :—

| | | | |
|------------------|----|----|-----------|
| Officers | .. | .. | .. 10,011 |
| Warrant Officers | .. | .. | .. 11,207 |

and the same effective strength of conscripts as shown above. The number of reservists, however, to be called up for periods of training in the summer is only to be 150,000. The total military budget for the year 1926 amounts to Kc. 1,935,402,500 (about 12½ million pounds sterling). This figure represents 19·22 per cent. of the total budget for the whole Republic, and is an increase of Kc. 119,966, 790 (about ¾ million pounds sterling) on the previous year's army votes. This increase is chiefly accounted for by the re-equipment with small arms, the expansion of the air arm, and the provision of new ordnance and armoured cars.

Relations with the Polish Army.

There has been a considerable rapprochement between the Czechoslovak and Polish General Staffs, who have since devoted much study to strategic problems of mutual interest; chiefly, the passage of Polish troops through Slovakia in the event of a Polish-Russian war, and Czechoslovak troops north of the Carpathians, in the case of Hungarian hostilities against the Republic. General Syrový, the Czech Deputy Chief of the General Staff, now Chief of the General Staff, attended the Polish manœuvres and remained for some days in Warsaw, and a mission of Polish General Staff officers spent a considerable time in Prague during October and November, 1925.

Military Control and Audit Department.

Owing to various scandals which have occurred in connection with army finance, supply and manufacture, a special Control and Audit Department was set up at the insistence of Minister Udrzal. This body consists of a certain number of senior intendant and technical officers, who are appointed to it for life, that is to say, up to the age of retirement. The nominations to these appointments are made by the President of the Republic in person. Its members can visit and audit the books and stocks of any department or formation, not excluding those of the Minister and the Chief of the General Staff. They do not give notice of their visits, and they can use their own discretion as to whether they report any irregularity to the Minister of National Defence, or direct to the President of the Republic.

Reorganization of the Eastern Commands.

On 1st October, the Tuthenian Command, with its headquarters at Uzhorod, was done away with, and in its place was set up the Kosice Command. This involved the removal of the eastern portion of the Slovakian Command (headquarters, Bratislava), which also lost the 11th Infantry Division, the 2nd Mountain Brigade and certain army troops. The order of battle of the new commands is as follows :—

Bratislava Command.

G. O. C.-in-C., General Skvor—

9th and 10th Infantry Divisions,
1st Mountain Brigade,
3rd Cavalry Brigade, less 5th and 10th Regiments,
Air Regiment, 3, less 7th and 26th Squadrons,
The River Defence Battalion,
Army Troops.

Kosice Command.

G. O. C.-in-C., General Snejdarek—

11th and 12th Infantry Divisions,
2nd Mountain Brigade,
5th and 10th Cavalry Regiments,
7th and 26th Air Force Squadrons,
Army Troops.

General Skvor was an engineer, officer of the Austro-Hungarian army and rose to the rank of divisional commander during the war.

After the armistice he was absorbed into the Czechoslovak army as a General and served as Chief of the General Military Branch of the Ministry of National Defence until his advancement to the Bratislava Command.

General Snejdarek is a Czech by birth, and began his military career as a regular officer in Austria. He later enlisted as a private soldier in the French Foreign Legion, in which he eventually attained the rank of Lieutenant-Colonel. He was sent to Czechoslovakia with the French Military Mission in 1920 with the local rank of *Général de Brigade*. There are rumours that this officer intends to transfer to the Czechoslovak forces.

Standardization of Small Arms.

The policy of simplification of the types of small arms in use in the army was initiated as long ago as 1921, and during the last year has approached realisation.

In the spring of 1925, the Government Rifle Factory at Brno began the mass production of the "Short Mauser" rifle, Type 79/24. By December, 75 per cent. of the infantry had been equipped with this weapon, and by the middle of 1926 it will have replaced the "Long Mauser," the Mannlicher M/98 and the Mannlicher carbine, in all arms and services.

During the autumn of 1925 the bulk manufacture of the Praga light machine-gun was begun, and it is intended that this shall replace the many types of light automatic weapon now existing in the army. The change, however, will hardly be completed by the end of 1926.

The Schwarzlose heavy machine-gun—Type M/7/12—has been universal in the Czechoslovak army since 1920, and there is, as yet, no word of its being replaced.

It may therefore be said, that at no distant date, all small arms in the army will take 7.9 mm. ammunition.

Mechanicalisation of the Field Artillery.

Interesting experiments have taken place during 1925 in this direction. Two types of caterpillar tractors were tried, for the draught of the 8 cm. field-gun and the 10 cm. field howitzer :—

(a) The "W. D." tractor of German manufacture, 25 h. p.

(b) The "Praga" tractor of Czechoslovak manufacture, 35 h. p.

Both tractors gave good results ; but the tactical interest of the experiments lies rather in the organization of the mechanized batteries. The tractors, complete with guns and limbers, were loaded on six-wheel Laurien-Clement 60 h. p. lorries. Up to the moment of deployment the equipment moved thus loaded. When action was ordered, the guns and tractors were off-loaded, under their own power, and proceeded into action ; the six-wheel carriers being withdrawn into park at some distance from the gun line. Minor tactical movements were carried out under caterpillar draught, as were also the ammunition replenishments during action. Long marches were effected after re-loading on the six-wheel carriers.

It is not known whether the experiments have given final results, or if further types of mechanical vehicles have yet to be subjected to trial.

Training.

In the early part of 1925, the General Staff brought out a tactical training manual for all arms, and specialist manuals for infantry and artillery followed shortly afterwards. The issue of these manuals has been most desirable in effect, since regimental officers and staffs have, for the first time in the history of this army, an authoritative tactical doctrine on which to train.

During 1925 there were no manœuvres for formations larger than a division, but regimental and brigade training was thorough and extensive. As a result, the leading of lower units and formations had shown a remarkable improvement. The air force co-operated in a large number of exercises with other arms. Although the higher command often left much to be desired, the French Military Mission are to be congratulated on the results of their labours in the direction of tactical education.

CORRESPONDENCE.

MEANING OF THE TERM "BATTERY COMMANDER."

SIR,

I sympathise with Captain English's opening remarks in his letter published in your issue for July 1926. There is undoubtedly a certain amount of confusion in the use of the term "Battery Commander." A. T. II, 60, 2 (not only "force of habit") enjoins that "the officer who observes the fire from the observation post controls the fire for the time being, and is referred to throughout this chapter* as the battery commander. Any other officer sent out to assist him in the observation of fire is called an "observing officer."

It would probably be clearer if the officer who controlled the fire from the observation post was termed the "observing officer," and any other officer sent out to assist in the observation of fire the "assistant observing officer."

The term "Battery Commander" would then apply only to the officer commanding the battery, who normally is, but may not be, the "observing officer" for the time being.

This, however, is not the place to recommend amendments to the training manuals, which must guide us as they stand at the moment.

GUNNER.

ADVANCED GUARDS.

SIR,

I have been much interested in the problem as set forth by the letters of "Infantryman" and Lt.-Colonel Beauman in your April and July numbers, respectively. May I, however, suggest that one aspect of the case appears to have been somewhat overlooked, especially as it is one which not only materially affects the problem, but also, I submit, tends to assist in its solution.

On reading Infantryman's letter the first question I asked myself was "What are the circumstances which necessitates a battalion operating apparently on its own on the vicinity of the enemy?" Or in other words, what should the advanced guard commander expect

* Chapter IX.—"Shooting with Ground Observation."

to find in his operation orders under the headings information, intention, and any special instructions as to the action he is to take on joining contact with the enemy (F. S. R. Vol. II, 46, 1)?

Infantryman simply gives "advancing in the vicinity of the enemy" but I assume from the context of his letter that he does not contemplate (i) a protective screen out in front, (ii) the possession of advanced guard mounted troops, or (iii) troops on either flank. On turning to Lt.-Colonel Beauman's suggested solution I find he is hardly more helpful. From his situation I gather the battalion is definitely on its own, has no advanced guard mounted troops, is to expect opposition "but in no great strength," and the direction from which opposition is coming is unknown.

Now I submit are these reasonable situations? Surely one has a right to expect that before the Higher Command can be prepared to launch a battalion into the blue without a protective screen, advanced guard mounted troops, or troops on either flank, it will have more or less definite information as to the strength of the enemy, where he is, and what he is doing, *e.g.*, advancing; in a defensive position, or retiring; and further that the battalion will be given it a very definite task to perform.

If the foregoing can be accepted as reasonable, then I maintain that the O. C. Battalion will be able to decide upon the strength of the advanced guard (as to which he is allowed considerable latitude I. T. 1926, 28, 3,) and to give its commander such information and instructions as will materially assist him in making his dispositions for the solution of his problem. Remember Foch's "*En somme, de quoi sagit-il?*" but even Foch requires some data from which to make his deductions.

On the other hand, if the problem is simply how is the van guard to secure to the main guard immunity from effective rifle and M. G. fire, then I think Lt.-Colonel Beauman has dealt with this very conclusively. In short, if it is accepted that the main guard is to be secured absolute immunity from effective rifle and M. G. fire, then the minimum size of the van guard becomes fixed and definite, variable only in so far as terrain affects visibility and movement.

Yours faithfully,

H. F. E. MACMAHON, COLONEL

REVIEWS.

NOTE :—*Elementary Tactics or the art of war, British School, by Major R. P. Pakenham-Walsh M. C. is published by Messrs. Sifton Praed & Co., London at 10s. 6d : the particulars given at the head of review of this book in the July Journal are incorrect.*

DISARMAMENT.

By

PROFESSOR P. J. NOEL BAKER.

Cassell, Professor of International Relations in the University of London ; late Whewell, Scholar in International Law ; late Fellow of King's College, Cambridge ; late Vice-Principal, Ruskin College, Oxford.

Published by the Hogarth Press,—52 Tavistock Square, London, W. C., 3, price 12s. 6d.

This treatise has been written for the general reader rather than for the expert ; and the author is to be congratulated on having produced a book on what must be considered a technical subject, which clearly illustrates not only the importance of the policy of disarmament but also the difficulties that must inevitably arise in the practical application of such a policy, which to be effective must be accepted by “ all or nearly all ” of the members of the community of States.

The Professor is, as might be expected, an optimist, and some of his proposals are unlikely to appeal to the ordinary man as practical propositions ; but whatever may be the general opinion as to the results of the Preparatory Disarmament Committee of the League of Nations,—which is to meet in the near future,—there can be no shadow of doubt that the appearance of a volume dealing with the problems that concern any international agreement for the reduction or limitation of armaments, is most opportune. No thinking individual is likely to dispute the soundness of the reasons given in favour of disarmament, more especially when it is realised that modern militarism,—by which is meant the growth in military preparations,—dates from so recent a time as 1860.

The purpose of disarmament is twofold :—Firstly, to reduce the economic burden laid upon the peoples of the world by excessive preparation for war ; and, secondly, to prevent that competition in preparation for war, from which war results. It is an undoubted fact that the disarmament provided for in article 8 of the Covenant of the League of Nations is morally binding on the contracting parties, and it has been confirmed, in words, in the Final Protocol of the Conference of Locarno, and, indeed, by the Sixth Assembly of the League

of Nations, which, in 1925, requested its Council to undertake the preliminary work necessary for the convening of a Conference on the Reduction and Limitation of Armaments.

The author is less happy in his comparison of the armaments of Europe with those of the South American Republics. He states that the disarmament imposed on Germany by the Treaty of Versailles in 1919, although denounced by her friends—not excluding pacifists—as a shame and a scandal, still left her, when certain factors are taken into consideration, with an armament superior to that of Brazil, or Chile, or the Argentine and the rest of the South American Republics. But the factors on which this comparison is based are population, length of frontier, area, and economic wealth. No word is said of the political or strategical considerations, without which such a comparison is useless. It is obvious, if all the states of a continent are equally weak in armaments, that the balance of power and “status quo” may still be maintained. Such a situation did not, in 1919, and does not now exist in Europe; consequently the ratio of German disarmament did, and must depend, on European considerations. This fact, in itself, is an illuminating comment on the difficulties attendant on any scheme of universal disarmament.

In his chapter on successful disarmament treaties, the professor cites as the only voluntary agreement the Central American Disarmament Convention of 1923, but states that, for various reasons,—including, *inter alia*, comparative poverty, lack of industries adapted to the protection of the machinery of war, and a general “eighteenth century” condition,—there is little in this particular treaty that has any bearing on the complicated problem of European armaments. His inclusion in this chapter of the disarmament of Germany, Austria, Hungary, and Bulgaria is somewhat misleading. Such disarmament “treaties” as were concluded with regard to these nations were compulsory, and are of little value, even in their details, as a basis for voluntary disarmament agreements.

Two chapters are devoted to the consideration of the reduction of armaments by simple Budgetary limitation, and of other unsuccessful proposals, and one chapter shews clearly the difficulties due to modern conditions. Factors arising out of, or peculiar to, conditions of modern warfare include War Veterans, conscription, the progress of invention, the peace-time uses of weapons, such as aircraft, upon

which success in war probably depends, and the importance in war of organic chemicals, which are, in peace, essential for our daily life.

The author deals, in turn, with land, naval, and aerial disarmament. The limitations he suggests are, as a whole, logically argued, though in two instances an apparent realisation of the magnitude of his demand reduces the argument to a simple expression of hope. He postulates that "an attempt should be made to secure general agreement for the prohibition of as many as possible of the modern weapons of war,—such as tanks, etc.," and again that "an attempt should be made to secure the total abolition of the submarine as an instrument of war."

Chemical warfare, restriction of weapons, and the system of demilitarised and neutralised zones are discussed, and, although no definite proposals are put forward, such discussion is certainly not without value.

Traffic in arms and ammunition, and their manufacture by private enterprise are considered, and the proposals of the Temporary Mixed Commission, and the discussions of the Arms Traffic Conference in 1925 are employed as the foundation for suggested provisions in any disarmament treaty. The limitation of the potential capacity of states to produce armament after war has broken out is inextricably bound up with the ratio of strength to be allowed to the various parties to a disarmament treaty, and the author, realising that this is probably the most intricate and complicated of all his problems, suggests full investigation by an expert Economic Sub-Commission of the League of Nations.

Finally the question of rights of investigation and mutual control is discussed, and an exhaustive,—if academic,—scheme is propounded which deals with the rights of Commissions of Enquiry, and the obligations of the Governments of the country under investigation.

There are four Appendices, dealing with Article 8 of the Covenant, the questionnaire referred to the Preparatory Committee on Disarmament by the League of Nations, the Military clauses of the Treaty of Peace with Hungary in 1920, and the Washington Naval Convention; and there is a detailed Table of Contents, designed, also, to serve as an Index

So much for the work, which is both comprehensive and interesting; yet, nevertheless, the average reader closes the book with a feeling of uneasiness, which, on consideration, resolves itself into two definite criticisms:—

The first is a general one. We may allow that Nations—despite the fact that in international affairs non-interference is the rule, and interference the rare exception—may permit certain minor questions affecting them, but not essential to their existence,—known by jurists as “Imperfect Rights”,—to be decided by arbitration or by a League, or similar body, in the interests of international peace. It is a very different question to ask nations to allow their perfect right—of sovereignty of control of their own affairs, of, (it may be, in the long run) their own existence—to be decided by a League, or by any form of arbitration. In the end, resort to war must be the factor that decides a nation’s existence, and no nation is likely to acquiesce voluntarily in an agreement which may lead to its own undoing. “When a strong man armed keepeth his palace, his goods are at peace.”

The second point is concerned with the author’s optimism. In his conclusion he says—“What chance is there now of success? Surely a great chance, on one condition: that Great Britain should give a lead”—and he goes on to say that America, Germany, Russia, France and all the smaller powers are ready and willing to co-operate—only waiting the influence, in the right direction, of Great Britain. It seems almost unkind to point out that neither America, nor Russia nor Germany, are members of the League which is the instrument suggested for universal disarmament. Would the gesture demanded of Great Britain be regarded in the spirit visualised by the professor, or as a sign of weakness and exhaustion of which advantage could be taken? Nations, like animals, must use all the means available to protect their own existence; and the state of the world,—human nature being what it is,—never has, and never will allow of implicit trust, or of a recognition of complete self-abnegation.

We may profit by reading the opinions and understanding the hopes of the idealists; but let us pray that we may always have wise men to guide our Empire’s destinies, who will never acquiesce in any agreement or convention that may, by ever so little, destroy our prestige or jeopardise our Imperial security.

THE PERILS OF AMATEUR STRATEGY.

BY LIEUT.-GENERAL SIR GERALD ELLISON, K.C.B., K.C.M.G.

(Longmans Green, London, 5s.)

The author's personal experience and position in the Great War have enabled him to show in glaring colours the weakness of our present system for the conduct of war.

The subject of the book has been a matter of controversy for centuries and yet the amateur strategist was as self-confident and as dangerous in the war of 1914-18 as he ever was in the years gone by.

General Ellison, in his book, goes very carefully and thoroughly into the steps leading up to the attack on Gallipoli in 1915, and tries to arrive at a just conclusion as to how such a campaign came to be undertaken when the opinion of the leading experts was emphatically against it.

It is to be hoped that the formation of the Imperial Defence College may be the first step towards the institution of a Combined Staff of the three Services who may be able to give the Government of the day a co-ordinated opinion on any military problem, which should make another Gallipoli impossible.

IMPERIAL MILITARY GEOGRAPHY (3RD EDITION).

BY CAPT. C. D. COLE, M.B.E.

(Sifton Praed, London, 10s.)

As most military officers are acquainted with Captain Cole's valuable book a detailed description of it is unnecessary. The mere fact of a third edition having been found necessary is of itself a tribute to its popularity.

The present volume has been considerably enlarged as compared with its predecessors and there are extra chapters and appendices. I think that Chapter XVI has been misnamed. It is entitled "The Gateways of India" and is actually a general survey, including notes on such subjects as Indianisation of the Army and the distribution of population and railways. The chapter is in effect a rough military report and would have been more aptly entitled "India."

Many people who buy this book use it mainly as a book of reference and therefore I consider that having the bibliography at the end of each chapter, instead of all at the end of the book is an improvement.

It is gratifying to note that the author has so far kept his book free of the defects of so many other works on Imperial Geography, namely politics and personal opinions.

There is a very useful and not too technical note on Beam wireless. There are twenty-eight good maps and diagrams and the book is well indexed. It is strongly recommended to all aspirants for the Staff College or Promotion examinations.

FOUR CENTURIES OF MODERN IRAQ.

BY S. H. LONGRIGG.

(*Oxford Clarendon Press, Rs. 13*).

The period involved is from the 16th to the 19th centuries and it represents a period which historians of Iraq have hitherto studiously neglected. The labour involved in compiling the book can be seen from a glance at Appendix I. The reader will admire Mr. Longrigg's scholarly style, patient zeal, and linguistic ability which have enabled him to produce what undoubtedly is a standard work. The casual reader will find the story dull. It is concerned with the adventures of some ambitious adventurers with unfamiliar names, whose fame, or infamy, has not penetrated much beyond the confines of their own lands. It is a story of sporadic warfare, of raids and counter-raids, the ultimate results of which have had little lasting effect. The outstanding feature of the book is that the various narratives combine to prove the political coherence of the whole territory in modern times.

An instructive account of the Wahabi movement, in so far as it affected Iraq, will be found on pages 212—217.

The author "ambitiously hopes to interest the historian, statesman and orientalist," and it is to the latter class of military student that this work will appeal. The student who loves to search the scriptures and ancient history generally for examples to illustrate the principles of war may find the accounts of the numberless petty wars of some military interest though it is feared that he will find it difficult to see the wood for the trees.

SKYWAYS.

BY A. J. COBHAM.

(Nisbet & Co. Ltd., London, 15s.).

To all who are interested in the growth of Civil Aviation, the story unfolded in the book under review must be of considerable interest; although it is a personal story, it is in a way the general story of the early struggles of Civil Aviation in England. Mr. Cobham tells us of his beginnings as a joy ride pilot touring England with a few companions and making a precarious livelihood, of other jobs he got taking aerial photographs for picture postcards and for factory owners, and finally how he became associated with the company he at present serves—The De Havilland Aircraft Co. Perhaps the most interesting are the touring flights abroad and they are worthy of special note in that one and all were accomplished with little or no ground organisation. They show what can be done with a reliable engine and aeroplane and a good pilot who flies in a common sense manner; there is no doubt that the secret of success in long distance flights is care of the engine and flight at an economical speed; any attempt to push the engine for any length of time invariably spells disaster. Mr. Cobham has since writing this book completed a noteworthy flight to South Africa and another to Australia; he may be regarded as one of the pioneers of civil aviation in blazing the Imperial trail, and the results of these flights must be of great value not only to the Empire but as showing the reliability of British Aeroplanes and engines. The book itself is good reading and in no way heavy as it might so easily have been; it is just a simple story told in a breezy style and illustrated by some very excellent aerial photographs.

LES CONDITIONS GEOGRAPHIQUE DE LA GUERRE.

BY CAPTAIN ROBERT VILLATE.

(Payot, Paris, Rs. 10).

A very interesting book written by a French officer with the object of showing the influence of geography on war in general and the late European war in particular. The author starts by comparing the three principal factors in war, namely, man, weapons and terrain, and proceeds to discuss the influence of the characteristics of the terrain on war, giving numerous instances from the campaign in France and Flanders.

He commences with a discussion of the influence of the geological conditions on mobile warfare, trench warfare especially the choice of positions, and on the health of the troops.

A chapter is devoted to the influence of topographical relief on the campaign, such as hills, valleys and other land forms. The question of water transport and supply is also dealt with. There is some very interesting matter on rivers as obstacles and the effect of marshes and inundations.

The value of woods and forests as cover for masking movement and preparations for attack is dealt with at some length. The author discusses woods as artillery emplacements, the defensive organization of woods, woods as obstacles to the march of formations and adverts on the different species of woods and the material resources to be derived from them.

What the author calls the human influence is next considered, *i. e.*, the work of man in altering the topography, such as towns, villages, roads and railways. Villages are considered as cover and as pivots of resistance, giving numerous examples. The organization of towns and villages for attack and defence is dealt with. The author brings out such facts as that of the population of towns being an important factor to be considered in war and gives reasons for the probability of a wealthy industrial town being adopted as a military objective.

The effect of the quality of roads on the mobility of the various arms also the value of railways in manœuvre form subjects which invite careful perusal.

The influence of the weather on war is carefully gone into ; the author dealing separately with temperature, wind, humidity, seasons and general climate, also the extreme value of meteorological service.

In dealing with general geographical factors the author discusses the natural zones of invasion in France giving reasons why they have always been used since earlier times (*e. g.*, facilities of routes, supplies and convenient battlefields).

The author very wisely concludes his book with a warning that, in spite of its obvious importance, geography is only one factor in the art of war although it influences all the others. He quotes Napoleon on he states "The politics of States is in their geography."

The book is a valuable contribution to the study of military geography, particularly that of France and Flanders. It only remains for some enthusiast to produce an English translation for the benefit of those who lack either time or ability to wade through a work in the French language.

There are 73 illustrations and 47 maps and sketches. The table of contents and index are at the end of the book.

THE SENATE AND THE LEAGUE OF NATIONS.

BY H. C. LODGE.

(Charles Scribner's Sons, New York and London, 1925, Rs. 16).

Mistakes made by President Woodrow Wilson during his term of office as President of the United States are the main theme in this book by Senator Lodge. The criticism of Mr. Wilson's actions is severe, but is undoubtedly justified. The final chapter contains a character sketch, in which the late President is shown to have been an ambitious man, who failed to make the best use of his opportunities, and who seemed to have worked more to benefit himself than for the good of his side.

The author describes various events which influenced the Senate in directing the policy of the United States from the beginning of the world war to the conclusion of peace. It is emphasised that if the President had asked the American people to go to war in 1915 after the sinking of the "Lusitania," he would have had behind him the enthusiastic support of the whole American nation.

The strongest criticisms of Mr. Wilson by the author are given in the later chapters dealing with the League of Nations, and with the debates held in the Senate about the League. Many of these debates are quoted in extenso.

In a book of 424 pages, the last 200 consist of Appendices, which are merely copies of speeches. In each chapter the author includes a number of letters and speeches written either by himself or by other members of the Senate. These may be of interest to an American citizen in touch with local politics at Washington; they make the book dull reading for British readers. The volume is well printed and has a good index. It gives one the impression of having been hastily

compiled, as it is a collection of notes and copies of speeches rather than a connected, well thought out and readable book.

The book is of very little value to military students.

OUR FIRST AIRWAYS.

BY CLAUDE GRAHAME-WHITE AND HARRY HARPER.

(*Nisbet & Co. Ltd., London, 6s. 6d.*).

The joint authors of this book are very well known in the civil aviation world and their opinions on matters connected with commercial aviation are always worthy of careful study. In this treatise on commercial aviation, which was written incidentally in 1919, they have attempted to answer the three most important questions connected with civil flying. Can an air service be made safe? Can it be made reliable? Can it be made to pay?

This little book is of especial interest to India at the present moment when she is about to be linked to Egypt by a commercial air service, which will inevitably lead to the consideration of setting up internal air services in the country, and is worthy of the study of all who are interested in the future of this problem.

Considering that the data the writers had to build up their ideas on was of the sketchyist when the book was written, the conclusions they arrived at are remarkably accurate in the light of what we now know. They have claimed that a civil air service can be made safe and this has been amply borne out by facts and the splendid immunity that Imperial Airways have enjoyed from accidents. They have pointed out that with the advance of the study of meteorology and the advent of the multi-engined machine there is no reason why a service should not be perfectly reliable and this has also been confirmed by post-war experience. They have tried to prove that an air service can be a commercially sound proposition financially. Although the figures they produce to prove this contention appear on the face of it to be sound it is now well proved that such air services have all required a Government subsidy to keep them alive. Their contentions may, one may even say will, prove true ultimately, but what they considered was a most pessimistic view of the probable situation at the beginning of these services has unfortunately proved to have been rosy in the

extreme. It was impossible to realise how long it would take people to get accustomed to travelling by air and in the case they argue, the London-Paris air route, the air service was running in competition with a very well organized land service and actually only effected about 6 hours saving in the journey at a very considerable increase in cost. The book is not merely an academic treatise but is full of practical suggestions for solving many of the difficulties which they foresaw and has also numerous illustrations of suggested types of machines. The section dealing with the organization of an air route is of especial interest to India and is a point of considerable importance in the setting up of any air lines in this country.

The book ends with some suggestions for the private owner; the ideas are excellent but are too futuristic even now. The revival of the light aeroplane had not then begun and I am sure that the authors will be the first to admit that this is the type of machine that is going to appeal to the general public these days far more than an expensive 5-seater limousine such as they contemplated.

A very interesting little book and as has been already remarked the suggestions are more valuable now, in that many have been proved to be practicable and on sound lines.

HOW TO INSTRUCT IN AIMING AND FIRING. (FOURTEENTH EDITION).

BY MAJOR J. BOSTOCK, O.B.E.

(*Gale & Polden, Ltd., London, 1s. 8d.*)

This is the fourteenth edition of this most useful little book which has been revised by Major Bostock up to 1926. Its form and contents are very clearly put and should prove of great value to the Instructor.

In the lesson for Aiming Off of Wind (p. 23) the difficulty of keeping elevation is not very well brought out.

In India the instruction is as follows :—

- (a) Recruits are taught the necessity for aiming off by means of reference to the effect of wind on a football, etc.
- (b) They are then taught to aim off a named number of lines to the right or left of the small aiming mark.

- (c) The Instructor then pins up the Auxiliary aiming mark and checks aim. This will, naturally, be correct laterally, but several recruits will have too much, or too little, foresight.

This brings out the first difficulty, *i. e.*, keeping correct elevation. The Instructor then shows how elevation is kept, *vide* S. A. T., Vol. I, Section 48 I, (iii).

Trigger Pressing.

(a) Plate 7 shows the recruit standing, whilst the letter press on p. 41 (and S. A. T.) say that he should be seated.

(b) No mention is made of the recruit being first required to place his fore-finger *under* that of the Instructor (S. A. T., Vol. I, Section 55, 3 (i)) before placing his hand *over* that of the Instructor.

MILITARY LAW (15TH EDITION).

BY LIEUT.-COLONEL S. T. BANNING, C.B.E.

(*Gale & Polden, Ltd., London, 1926, 8s. 6d.*).

“Banning” is well known to officers. It is an admirably arranged digest of the Manual of Military Law and presents to the reader in a handy form the principal points in military law ; authorities are quoted and references invariably given.

It is not a “Cram book” and will be useful as a book of reference to officers who find the official manual rather confusing.

In the fifteenth edition all amendments made in the law and regulations up to the end of 1915 are included.

THE FIGHTING FORCES.

(GALE & POLDEN, 5s. QUARTERLY).

(July 1926).

The July number of the “Fighting Forces” is of exceptional interest and contains articles by Colonel Fuller, the Hon. J. M. Kenworthy, M. P., and Major B. C. Dening.

A short story entitled “Mustard” by Frederick Nicholson gives a very vivid picture of the disaster which might overtake a nation

which, in accordance with existing international agreements, refrains from using gas at the outbreak of war pending a communication from the enemy nation as to her intentions with regard to its use.

At the same time as the communication is received, to the effect that gas will be used, a concentrated gas attack is made from the air which entirely paralyses the rearward services of the Army.

Colonel Fuller's article is on the "Tank Lessons of the Great War" subject about which he is especially qualified to write. He discusses in turn the effect of tanks on the tactics of each of the other arms.

In the course of a short article Lieut.-Commander Kenworthy puts forward a strong case for the establishment of a Ministry of Defence with a combined General Staff.

THE ARMY QUARTERLY.

(WILLIAM CLOWES & SONS, LONDON, 7s. 6d.)

(July 1926.)

The Military Prize Essay for the Bertrand Stewart Prize (1926), won by Captain K. F. D. Gattie, South Wale Borderers, is published in this number. The subject required discussion of present day problems of Imperial Defence and the extent to which they have been modified by changes in the balance of power since 1918 and by modern developments in weapons and methods of warfare.

The winning essay gives an exceptionally clear and well reasoned exposition of the subject.

An interesting item among the contents of the July number is a criticism of the review of Colonel Fuller's new book "The Foundations of the Science of War" which appeared in the previous number of the Army Quarterly.

This criticism is as severe on the reviewer as the latter was in his original comments on the book.

Colonel Rowan Robinson contributes a short article criticising the modern rank titles of "Second-Lieutenant" and "Colonel Commandant." He would substitute the more attractive titles of "Ensign of Foot" and "Cornet of Horse" for the former and "Brigadier" for the latter.

The subject selected for the Bertrand Stewart Prize Essay for 1927 is announced.

PRACTICAL MATHEMATICS—A GUIDE TO FIRST CLASS
AND SPECIAL CERTIFICATE.

BY LIEUT. F. P. ROE, A.E.C.

(*Messrs. Gale & Polden, 6s. 6d.*).

The increasing numbers of candidates who present themselves for the Army First Class and Special Certificate Examinations, have created a need for text books dealing with the syllabus for these examinations.

Messrs. Gale & Polden are publishing a series of Army Educational books of which the latest is this book on practical mathematics.

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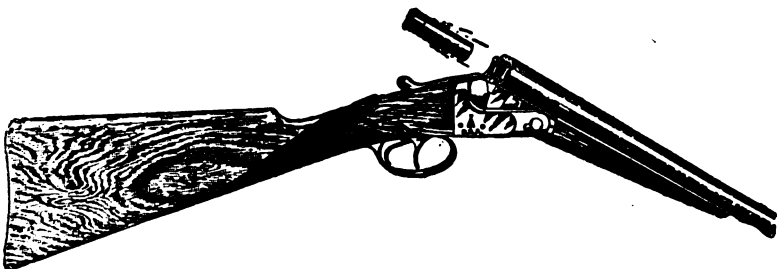
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